

ROADRACING WORLD®

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PUTTING POWER
TO THE PAVEMENT:
2001 APRILIA RSV MILLE

REMATCH:
2001
CBR600F4i
GSX-R600,
YZF-R6

THERE'S NO SUCH THING AS TOO MUCH POWER:

SUZUKI GSX-R1000 vs.
YAMAHA YZF-R1 ON
THE STREET,
RACETRACK
AND
DYNO

TECH:
WHY THEY
SHAKE,
WHY
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PART VIII

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Three 2001 600s on the front straightaway at Willow Springs, (from left) the Honda CBR600F4i, the Suzuki GSX-R600 and the Yamaha YZF-R6. Photo by John Ulrich.

A Tale Of Five Bikes And Two Winners, One By A Landslide And One By A Nose

By David Swarts

Since its introduction in late 1997, the Yamaha YZF-R1 has been the baddest open-class sportbike going, on the street and on the racetrack. The Yamaha was still going strong three model years later, winning the Big Bore Brawl in the May, 2000 issue of *Roadracing World*, beating the Honda CBR929RR and the Kawasaki ZX-9R. But this is 2001, and there's a new challenger in town, the Suzuki GSX-R1000 (see *Roadracing World*, November, 2000 and February, 2001 for technical details).

Ditto in the 600cc class. The Yamaha YZF-R6 has been the machine to have for anybody into speed, making more power and handling better than its competition. But again, there's a new challenger in town, the Suzuki GSX-R600. As soon as we rolled it away from the Suzuki press intro held at Road Atlanta last October, we took the 2001 GSX-R600 to Daytona to meet its competition at the World Center Of Racing, Daytona, U.S.A., for the December, 2000 issue of *Roadracing World*. It became apparent that the Suzuki was a match for the 2000 YZF-R6 we compared it against, and more than a match for the 2001 Kawasaki ZX-6R and 2000 Triumph TT600 we included. The catch was, we didn't have and couldn't get a Honda for that test, and, as we predicted, Yamaha fans felt it unfair to match a 2000 Yamaha against a 2001 Suzuki.

Fair enough. The improvements in



The 1000s in turn one at Willow Springs, the 2001 Yamaha YZF-R1 Champion's Edition and the 2001 Suzuki GSX-R1000. Photo by John Ulrich.

the Yamaha YZF-R6 for 2001 were detailed in the November, 2000 issue of *Roadracing World*. Details on the improvements made to the CBR600F4 for 2001 (including its transformation into the CBR600F4i with new fuel injection) were included in the February, 2001 issue of *Roadracing World*.

So we ordered up one of each and set up a Suzuki vs. Yamaha rematch, with the Honda thrown in for good measure. (The Kawasaki ZX-6R and Triumph

TT600 were not included because they are much more biased toward street comfort than ultimate performance, and we're looking for the baddest rides on pavement, and besides, Kawasaki was unable to supply another 2001 ZX-6R test bike. The Kawasaki ZX-9R and Honda CBR929RR were not included because the YZF-R1 has already beaten them in a fair fight.)

Now step back into the way-back machine, set the controls to 1977, and

listen to an experienced motorcycle journalist convincing a much-younger version of what is now Mr. Editor Ulrich that the 1978 Suzuki GS1000 was likely to be the high-water mark in overall street motorcycle performance. Jump forward to 1988 when I was an 18-year-old kid looking to buy a Kawasaki Ninja 750—the first 750 to break into the 10-second quarter-mile bracket and just top 150 mph—and watch a past-his-prime motorcycle salesman adjust his

shirt and say "Well, son, I don't think these bikes can get much faster than they are now."

The only constant is change, and nothing illustrates that better than high-performance sportbikes. Somewhere in the world there's a bigger, better, faster, lighter contender still on a design team's computer screens. When it shows up, the best bikes of 2001 will be elbowed aside, with the process continuing and various brands trading the title of best in class. Eventually, the bikes featured here will seem as archaic as the 1978 GS1000 and 1988 Ninja 750 seem today.

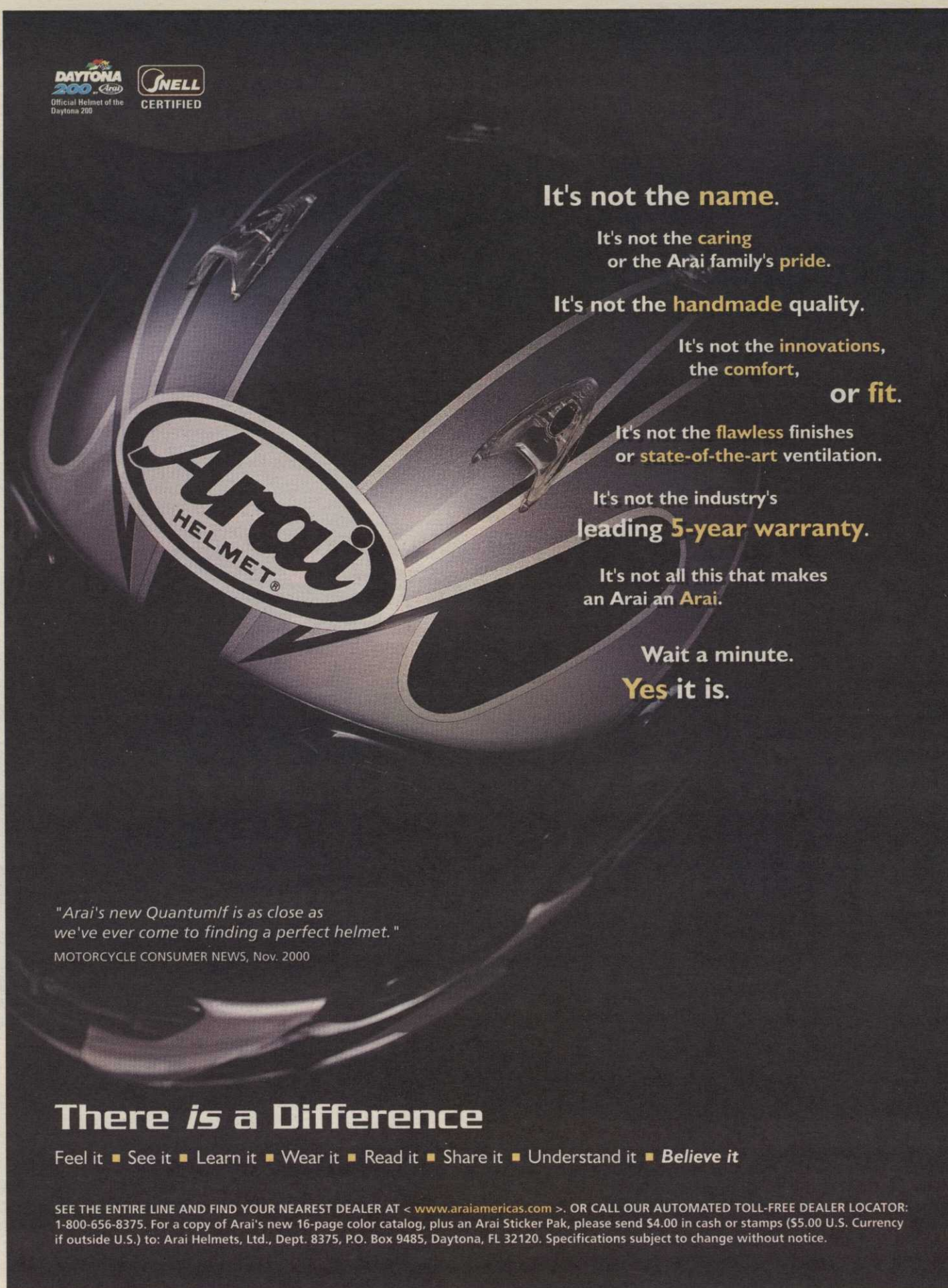
First stop with our fleet of test bikes was the White Brothers model 200 Dynojet Dyno, operated by motocross legend Gary Jones at White Brothers' Yorba Linda, California headquarters. The Yamaha made 124 horsepower with the Suzuki at 144 horsepower. Posting that news on www.roadracingworld.com set off a stream of complaints from YZF-R1 owners certain that our test bike was sick, because no R1 could make so little horsepower. So we went back to Yamaha, traded the R1 in for another example, went back to White Brothers, and got the same readings for the Yamaha and Suzuki. The two bikes then made a trip to North County Hyper Sports in Oceanside, California for a turn on a model 150 Dynojet dyno operated by Glenn Castro. This time the Yamaha made 131 horsepower—and the Suzuki made 149. Giving it one more shot, we ran the bikes again a few days later on the L&L Motorsports model 250 Dynojet mobile dyno at Willow Springs Raceway, where the Yamaha made 134 horsepower and the Suzuki made 152 horsepower. Any way you cut it, on three different dynos, compared back-to-back under the same conditions and on the same day, our 2001 Suzuki GSX-R1000 test bike made about 18 more horsepower than our 2001 Yamaha YZF-R1 test bike. And the numbers obviously shatter the idea that all Dynojet dynos read the same, correcting for ambient conditions to a comparable baseline; as to whether or not that's due to operator influences, we'll leave that for others to argue about.

Our dyno tests of the three 600s was less controversial. All three were run in quick succession on the White Brothers dyno and nobody howled. The GSX-R600 made about 101 horsepower while the YZF-R6 and the CBR600F4i both made about 98. (When we tested them on the same dyno in 1999, the 1999 versions of the Yamaha and the Honda made about 95 horsepower and about 92 horsepower, respectively.) Bear in mind that dyno readings aren't everything. The dyno chart shows that the Honda has a smoother power curve with more torque than the Yamaha. But when judged by the seat of the rider's pants, the Honda felt slower, with less mid-range.

Dyno Readings

Yamaha YZF-R1	
124.6 bhp @ 9700 rpm,	71.1 lbs.-ft. @ 8700 rpm
Suzuki GSX-R1000	
144.9 bhp @ 10,600 rpm,	76.5 lbs.-ft. @ 8100 rpm
Suzuki GSX-R600	
100.8 bhp @ 13,000 rpm,	45.6 lbs.-ft. @ 10,500 rpm
Yamaha YZF-R6	
98.1 bhp @ 12,500 rpm,	42.6 lbs.-ft. @ 10,000 rpm
Honda CBR600F4i	
97.6 bhp @ 12,500 rpm,	44.0 lbs.-ft. @ 10,000 rpm

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After their runs on the dyno, we stood the bikes up straight and filled the tanks until fuel touched the bottom of the filler neck. Then we shoved them up onto the certified *Roadracing World* digital scales. In the world of light is right, the Suzukis now reign as kings. Both GSX-Rs are the lightest in their classes. In the world of power-to-weight ratio, the big GSX-R is the ultimate supreme ruler of

traction, profile and carcass construction—without upsetting the chassis geometry. For our test, we removed the stock OEM tires and fitted the excellent new Metzeler Rennsport DOT-labeled racing tires, 120/70-ZR17 RS1 fronts in the "Blue" or super-soft compound, 180/55-ZR17 RS2 rears in the "Green" or soft compound. The catch is that tires with the same nominal size designation can vary dramatically in actual size, and in some cases stickier tires are not readily available in the OEM size, a good example being the YZF-R6 and the 1.0-inch outside-diameter difference between its OEM Dun-

sure or a piece of string then laid against a tape measure, divide by Pi to get the diameter, divide by 2 to get radius, and compare radius numbers, which indicate height of the tires. If one front tire has a 12mm larger radius than another, then the front end has to be raised or lowered to compensate and maintain OEM geometry.

Generally, the Metzeler tires ran smaller than most of the OEM front tires and larger than most of the OEM rear tires. This forced us to mainly raise the front of the bikes to recover the original geometry. The Metzeler performed very well during our test, drawing raves from our testers. The long life of the tires allowed us to avoid wasting valuable time changing to new tires. Each of our 600s did 40 laps before tire grip started to be lost. The 1000s used up the Metzeler more quickly, but still did 20 hard laps before losing ultimate grip. The only criticism our testers had concerned grip on snowy surfaces, and a lack of studs for use on ice during road testing.

requiring just loosening one bolt and flipping over the shift linkage end on the shift shaft. Doing the same thing on the Honda CBR600F4i required that we remove the countershaft cover first. And to reverse the shift pattern on the Yamahas we had to install a left-side footpeg and control assembly made by Graves Motorsports.

First up was a 60-mile highway drone to Oceanside for our third dyno test of the 1000s, followed by a ride through suburbia and out into the country toward Mount Palomar on two-lane roads. A run up the twisty pavement of Mt. Palomar soon put us in the company of SUVs full of kids heading for a day in the mountains, with the pavement going from damp to wet to slushy and the roadside scenery soon disappearing under a thick blanket of snow. At the top of the road, snow was everywhere, with slush cascading off overhanging trees and coating the pavement. A run down the back side of the mountain put us back on drying pavement, and the last miles of twisties were dry and traffic-free. Then



The fleet on Mount Palomar, with snowballs flying. In the background, four of the five licensed racers who went on the street ride, (from left) Dr. Reggie Gaudino, David Swarts, LaVaughn Daniel and Ed Sorbo. Photo by John Ulrich.



Another view of the fleet in the snow on Mt. Palomar, with sleet-covered road in the background, (from left), the Yamaha YZF-R1, Suzuki GSX-R1000, Yamaha YZF-R6, Honda CBR600F4i and Suzuki GSX-R600. Photo by John Ulrich.



On the way down the back side of Mt. Palomar, on a dry road, (from left) the Suzuki GSX-R600, Honda CBR600F4i, Yamaha YZF-R6, Yamaha YZF-R1 and Suzuki GSX-R1000. Photo by John Ulrich.

Street Riding

Riding these bikes on the street is like going on a date with a Supermodel and taking her to Taco Bell. Sure, you're out with a Supermodel, but you just can't do what you would really like to do without seriously breaking some laws. Each of these bikes is capable of earning you a speeding ticket on the freeway in second gear, and third gear can get you put in jail. For fans of the Back To The Future series of movies, anything above fourth gear and a handful of throttle plus 1.21 gigawatts can take you back to the 1950s.

But even motorcycle racers ride on the streets at times, and the vast majority of sportbikes sold will see far more street time than track time. So on the first sunny day available, we headed out of Lake Elsinore, California on a street ride, including city streets, Interstate highway and twisty mountain and desert roads. Our group was made up entirely of licensed racers, including me; Dr. Reggie Gaudino, PhD; LaVaughn Montgomery Daniel; Ed Sorbo; and Mr. Editor John Ulrich.

To simplify switching back and forth between bikes for our collection of racers, we converted each bike to GP shift pattern, one-up, five down. That was easy to do on the two Suzukis,

it was more two-lane roads back into suburbia and up the freeway into Lake Elsinore, for a total distance of about 250 miles.

At the top of the mountain, we took a break for photos, which gave us time to look the bikes over more closely. The YZF-R1's limited-edition paint job drew notice from other riders but the bodywork panels on the Yamaha didn't quite fit together, not as well as they did on the YZF-R6. The YZF-R1's titanium exhaust canister seemed to stain easily but by the end of our testing, the R1's stainless collector pipe had a rainbow of colors to show off. The YZF-R6 features a new streamlined rear fender that incorporates red LED taillights that shine through white lenses. Yamaha must have some younger designers working on the YZF-R6 because this setup is trick with a capital T. The Honda had a front-end styling makeover for 2001, going to twin headlights with only one lighting up for low beam, along with reshaped ram air inlets. I liked the new look and thought the Honda looked the best with its blacked-out frame and very high-quality black-and-silver paint job, but not everyone shared that opinion. The new generation GSX-Rs have

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the universe of mass-produced bikes. The GSX-R1000 undercuts the R1 by 8.0 pounds, while the GSX-R600 underweighs the YZF-R6 by 16 ounces. Despite a New Year's resolution to lose weight, the Honda F4i now actually weighs one pound more than it did as a lowly F4 back in 1999. The Honda CBR600F4i weighs 12 and 13 pounds more than the Yamaha and Suzuki, respectively, and the Honda 600 weighs only two pounds less than the Suzuki GSX-R1000. (Judging by seat of the pants on the street, the weight differences between the 600s could not be felt. Between the 1000s, one tester said he could clearly feel the YZF-R1's extra weight.)

Another important aspect of fair testing is to remove tire variables—like

lop D207 front and the applicable Dunlop D207 GP racing tire. Slapping on tires without adjusting the chassis for varying tire diameter can change rake, trail, wheelbase, weight bias and swingarm down slope, drastically altering the handling of a motorcycle.

One way to compensate is to measure the circumference of each tire in millimeters by using a tailor's tape mea-

Weight On Certified Scales, Weight Bias, Power-to-weight			
Suzuki GSX-R1000			
439 lbs.,	51.7 % F/ 48.3 % R,	3.0 lbs./hp.	
Yamaha YZF-R1			
447 lbs.,	50.5 % F/ 49.5 % R,	3.5 lbs./hp.	
Suzuki GSX-R600			
424 lbs.,	51.5 % F/ 48.5 % R,	4.2 lbs./hp.	
Yamaha YZF-R6			
425 lbs.,	50.0 % F/ 50.0 % R,	4.3 lbs./hp.	
Honda CBR600F4i			
437 lbs.,	50.2 % F/ 49.8 % R,	4.5 lbs./hp.	



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LETTERS

To the editor

The Type Of Letter We Run In The Winter Months When There's Not Much Racing Going On

This letter is in response to the letter written by John Cone of Marion, North Carolina and published in the June, 2000 issue of *Roadracing World*. Before launching into my rebuttal of Mr. Cone's misrepresentation of the state of Darwin's theory of evolution, let me present my educational background.

I have a B.S. in Biology, with a concentration in Molecular Biology. I also have a Ph.D. in Molecular Genetics, and my Ph.D. thesis work was on the transcriptional regulation of ribosomal RNA (rRNA) in bacteria. My post-doctoral research was on transcriptional regulation of rRNA in plants. I am published in a number of scientific journals, and I have co-authored a book chapter for a NATO Symposium Series. My research on rRNA is important to this rebuttal letter, because it will illustrate just how wrong Mr. Cone is in his assertion that "it's a matter of scientific record: Darwin's theories of chance mutation and natural selection are as dead as that hammer lying out in your toolbox." This particular field also happens to be one that I have maintained an interest in despite now pursuing a law degree so that I can practice biotech patent law.

Mr. Cone, I am sure that I don't speak alone when I say that there are numerous scientists who would like to know where it is you get your information from. Especially that part about the moth research being one of the most blatant cases of academic fraud ever perpetrated. There may have been some fudging of data, but there are much bigger cases of academic fraud foisted on unsuspecting students. Look into the issue of slavery and the number of Africans who died before they ever got to America, for instance.

Regardless of the Kansas school board decision, or any of the other school boards before it that decided that creationism should still be taught in schools, there is too much fossil and molecular evidence in support of a theory of evolution. Darwin's theory of gradual evolution may or may not be correct in light of the evidence that supports the punctuated theory of evolution (i.e., no change for long periods, followed by short periods with lots of changes), but nonetheless, even the punctuated theory of evolution is an evolution of Darwin's theory of evolution.

Now down to the scientific evidence using rRNA. I will use some non-scientific analogies at the end of the letter, as did Mr. Cone, so that the readers don't feel like they are in a biology lecture.

The start with, rRNA is a unique nucleic acid that has as its sole function becoming part of the protein synthesis machinery. This machinery is called a Ribosome. It is responsible for the physical manifestations that we can see as our outward appearance, in that it makes the proteins that are encoded by DNA, which is the blueprint of our life. Your eyes are blue or brown or green because of DNA that says it will be that way, and the ribosome makes the proteins that show up and make your eyes that color.

The interesting part of this is that the catalytic function for connecting amino acids together into proteins is actually part of the rRNA, and not the proteins that make up the outer shell of the ribosome. What is even more interesting is that there are significant portions of the rRNA which are identical throughout ALL ORGANISMS. Yes, you read right. From bacteria to Man. I'd be misleading you if I said that there weren't differences, too. So, let me say there

are differences in the rRNA of all organisms too, BUT, those differences occur outside of the catalytic domains, in regions called "expansion regions". The differences in rRNA sequence between different organisms in these expansion regions is so apparent that you can classify organisms based on the nature of their expansion regions. This leads to the next issue, molecular evolution.

Scientists were so enamored of Darwin's theory, that when we developed the tools to study organisms at the molecular level, we also started examining the molecules of life to see if they, too, evolved in a manner similar to organisms evolving from one another. Molecular evolution is studied in many different fields of biology. This type of evolution research involves sequencing the DNA or RNA of various organisms, closely related or not, and aligning the sequences to develop a map of changes in the sequence of the DNA or RNA. These maps allow us to determine which organism is ancestral to another, or even determine if organisms are truly related. Interestingly enough, the DNA or RNA most often used for this type of research is.....rRNA or the genes that encode the rRNA, i.e., the rDNA.

This tool for analyzing sequences can actually find differences between organisms that were previously thought to be identical species, just because of differences in sequence in the conserved regions and in the expansion regions. Remember the regions of the rRNA which are highly conserved (very few changes, and those changes are conservative in nature) or invariant (no changes at all over a given length of sequence) are the portions of the rRNA that actually do the job of making protein.

What does this mean to the lay person? Well, one thing it means is that errors in taxonomic classification are now being corrected because of the use of the technique of looking at rRNA sequences and determining what plants or animals are really related to each other, as opposed to looking at something and saying "well, it looks a lot like that so it must be related or be in the same family as that". Several important reclassifications have been made in both bacteria and plants. Another thing it means is not only are we related to primates, but we are actually related to single-celled organisms like bacteria, to a certain extent. That's right, we have sequences in our rRNA, and in other parts of our DNA, that are identical to the sequences that are found in bacteria, chickens, dolphins, etc. etc.

I know a lot of people will have a problem with that concept, so here's my analogy. And it's one that we should all be able to appreciate since it involves our holy of holies, the internal combustion engine. Think about all the auto and motorcycle manufacturers who have ever produced a vehicle that has an internal combustion engine. Did every one of those manufacturers invent the internal combustion engine themselves? Or did they all take an existing engine design, and modify it (or should I say evolve it) in some way so that it was a little better than the model before it? Or if it wasn't better at least it fit their particular application better? We have pushrod engines, overhead cam engines, desmodromic engines, engines with hydraulic lifters, and so on. The point is they are all internal combustion engines, and they all differ in the way the valve actuation occurs. Did each of these engines get invented independently of each other? No, of course not, they were all evolutions of a previous design.

And that is exactly what evolution is all about. Taking successful gene sequences and changing them slightly so they are either better or they fit other applications better. A very good example of this is the oxygen carrier in our blood, Hemoglobin. We actually have several different kinds, some of which are expressed when we are fetuses, or children and others when we are adults. We also have several "junk" Hemoglobin genes in our cells which are examples of evolution in action. They are

failed attempts at making the gene better, but they could still become useful in a few million years. Think about it, it would take an awful lot of work to reinvent the wheel each time.

Now for you creationists out there, think of it this way: Even if there is a GOD who is responsible for our design, don't you think he would have been smart enough to use the successful bits over and over again in all his creations? Or do you think he would have started from scratch on each new design? I mean think about it, He's a busy guy with lots of galaxies and stars and planets and organisms to create. In all his infinite wisdom, don't you think He would have seen fit to take the good parts and use them in multiple applications? And besides, how else do you explain all the fossil evidence that has been carbon-dated and shows changes in members of what are clearly related organisms?

In closing, remember the church just recently came around to acknowledging the fact that Galileo, Copernicus and Kepler were all correct about their theories of the Earth revolving around the sun, the planets and solar systems, etc., etc. You really want to trust the church men on their theories about how we all got here?

Oh, and by the way, before I went into a biology graduate program, I considered going into the seminary, so you can't say it's because I am not religious. I am probably one of the most religious scientists I know.

Reginald J. "Reggie" Gaudino, Ph.D.
Oceanside, California

When he's not sequencing genes or studying law, Dr. Gaudino is a motorcycle road racer....John Ulrich, Editor.

The Life Of Racebike Parts Vs. Streetbike Parts

I have a question concerning piston and crank life expectancies. While reading the very interesting articles about Per Hogdahl's NRS500V in the February, 2000 issue of *Roadracing World*, I learned that the crank requires replacement after about 1300 miles, and the pistons have about 217 miles of useful life. Although I am mechanically uninitiated, I am aware that most race-prepped machined undergo a thorough tear-down after each race, including replacing pistons and crank as needed. What are the reasons for the difference in life span of racing cranks and pistons as opposed to those on your streetbike? I always assumed the answer had something to do with the racing parts being composed of different materials, being machined for lightness in order to achieve greater rpm rather than longevity, as well as the sustained high rpm the engine has to endure each race. What is the breakdown process of a piston or crank in the NSR, RS or race-prepped four stroke as it nears the end of its useful life? How does this process differ from the gradual wearing of the same parts in a streetbike? What parts or areas are particularly prone to wear or failure (e.g. pins, bearings)? Clearly, the manufacturer of a racing piston/crank and

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Tul-Aris 780 builder Rob Tuluie increased power output and reduced vibration in a series of dyno tests done after *Roadracing World* tested the machine for the February, 2001 issue. According to Tuluie, fitting 2mm larger carburetors (from 39mm to 41mm) and refining the jetting on the Lofgren Racing/Manley Cycle Dynojet dyno in Minneapolis produced 152 horsepower and 96 lbs.-ft. of torque from the 309-pound machine (weighed full of fuel). The machine made 143.8 horsepower and 92.4 lbs.-ft. of torque on the White Brothers Dynojet dyno during our testing. Tuluie also reduced handlebar vibration by a factor of three, testing handlebars of varying designs and materials and fitting accelerometers on the handlebars and triple clamps to collect data during dyno runs. Tuluie plans more testing to further reduce handlebar vibration, which was so severe during on-track testing of the Tularis that Tuluie and rider Mike Ciccotto decided not to race the machine until vibration could be better controlled.

Bridgestone Corporation has made it official, announcing that it has begun testing tires for the 500cc World Championship with Kanemoto Racing and riders Nobuatsu Aoki and Shinichi Ito on Honda NSR500s. According to a press release announcing the test program, "the company has put in place a global organization to create the tires" and "the start of development work on racing tires for 500cc motorcycles is one of several events to mark Bridgestone's 70th anniversary in 2001." The release also stated that "Bridgestone Corporation, headquartered in Tokyo, is the world's largest manufacturer of tires and other rubber products. Tires account for 79 percent of Bridgestone Group sales worldwide. The company also manufactures industrial rubber and chemical products, sporting goods and other diversified products. It sells its tires and other products in more than 150 nations."

The AMA issued a January 22 press release announcing that Rick Gray and Jeff Smith have been re-elected and elected, respectively, to the AMA Board Of Trustees. Gray is a 21-year member of the AMA from Lancaster, Pennsylvania, has served on the Board of Trustees for six years and is the current Chairman. Gray beat Jerry Wood and Bob Coy in balloting from the Northeast Region. Smith, now retired after nine years as AHRMA Executive Director, is from

Wausau, Wisconsin and has been a member of the AMA for 28 years. Smith won the 500cc Motocross World Championship twice, and beat Dale Greenwald in North Central Region votes for the AMA seat. Dal Smilie of Helena, Montana was unopposed in the Northwest Region. Trustees from the Southwest, Southeast and South Central Regions will be elected later this year. Terms run for three years and individual members elect six of the 12 board positions. The other six are theoretically elected by AMA corporate members.

Gray and Smith each won re-election and election by less than 250 votes in their respective regions. Gray won with 830 votes compared to 599 for Jerry Wood and 184 for Bob Coy. There were some concerns that Coy, who runs the USCRA Vintage road racing organization, would be a spoiler in the election by drawing votes cast by road racers who would have otherwise voted for Wood, an active racer and official with LRRS who ran on a reform platform. But even if Wood had received all the votes cast for Coy, Gray would have still won by 47 votes. Smith beat challenger Dale Greenwald by 245 votes, 581 to 336, to take over the seat vacated by a retired Trustee. The election results were certified by the accounting firm Ernst & Young of Columbus, Ohio.

Teams and deals for the 2001 season: Project Monza and rider Bill St. John will compete in the Heavyweight Twins class of the WERA National Challenge Series on a BCM Motorsports Ducati 748 and in the Lightweight Twins class on a Cycle Specialties of Athens Ducati 750SS.... Team MB Motorsports will field Robert Fisher, Dwight Lewis, Bernie Hunt, Zoran Vujasinovic and Matt Blashfield. Team MB Motorsports is owned by Blashfield and Frank Stroman and the team's bikes will be prepared by Stroman and Jeff Reel.... Bell County Harley-Davidson/Bleu Bayou Racing has teamed with Austin Harley-Davidson to form Austin/Bleu Bayou Racing and will campaign Harley-Davidson VR1000 Superbikes ridden by Jordan Szoke in the AMA Superbike Series, with additional technical support from Harley-Davidson Motor Co.... Racer Mike Ciccotto and the Hal's Performance Advantage Buell/Harley-Davidson team will concentrate on the AMA Pro Thunder Series instead of defending Ciccotto's Formula USA Buell Lightning Series title. Ciccotto will also ride a Suzuki GSX-R750 for Hooters Suzuki at AMA events, but has decided not to race the Tul-Aris 780 in selected CCS events as formerly planned; Ciccotto said he made his decision not to ride the Tul-Aris after consulting with the Buell and Hooters teams and his personal manager, Norm "Lawdog" Viano.... Defending Canadian Superbike Champion Steve Crevier will seek his sixth Canadian Superbike title in 2001, riding for a Honda team run by former racer Alan Labrosse; Michael Taylor, Crevier's brother-

in-law, will be Crevier's teammate. The pair will compete on RC51 Hondas in the Superbike class with Crevier on a CBR600F4i in the 600cc Sport Bike class and Taylor on a CBR929RR in the Open Sport Bike class.... Harder Racing Development (HRD) will field young guns Cory West, 16, and Jeffery Harder, 14, on RS250 and RS125 Hondas, respectively, in AMA, F-USA, WERA and CCS events.... Tripp Nobles will compete in the 2001 AMA Pro Thunder Series on a Tilley Buell.... GPRA West Coast Champion Peter Hofmann, 26, has landed a ride in the 125cc European Championship Series with Team Raudies, a team owned by 1993 125cc World Champion Dirk Raudies. Hofmann was recommended to Raudies—who himself didn't start racing until he was 25 and who won his World Championship when he was 30—by Raudies' former mechanic Uli Maier, a friend of the Hofmann family who worked with Hofmann throughout 2000 and who is now working for the Kawasaki World Superbike team. Hofmann will ride a Honda RS125 sponsored by the oil company Total, Daytona boots, Aeris.net, and most likely Bridgestone. Hofmann is Manager of Investment Analysis for Aeris.net and will commute between his home in San Jose, California and the team base in Munich; Hofmann says that his employer is being very supportive. Team Raudies is scheduled to start testing March 7-11 at Cartagena, followed by more tests March 19-21 at Mugello and April 13-15 at Hungaroring, with the European Championship season starting April 27-29 at Vallelunga in Rome, Italy. "It's a dream come true," said Hofmann.

Freddie Spencer, the 1983 500cc and the 1985 500cc and 250cc World Champion, was back on a Honda 250 for two training and coaching sessions with young gun Jason DiSalvo at Las Vegas Motor Speedway. DiSalvo, 16, spent January 10-12 with Spencer at the Las Vegas track before heading to Buttonwillow Raceway Park in California January 13-14, returning to Las Vegas January 15 and then testing at Willow Springs Raceway January 18-21. Spencer rode DiSalvo's spare 2001 Honda RS250 with DiSalvo in the sessions at Las Vegas, to evaluate DiSalvo and observe him at close range as well as to diagnose problems DiSalvo was having with machine set-up. Spencer last rode a Honda RS250 in January 2000, when he took a few laps on DiSalvo's 007 RS250 at Las Vegas. Prior to that, Spencer had not been on a 250 since his World Championship-winning year, 1985.

At Las Vegas, DiSalvo and Spencer rode on the 1.1-mile infield course used by Spencer's riding school (and located inside the Speedway oval) as well as on the renovated 2.2-mile road course located outside the Speedway, on adjacent land. The 2.2-mile course has been fitted with GP curbing and rumble strips and run-off has

been improved with the removal of a wall in the last turn.

"Jason was saying it was stiff, and after riding it, I could see it definitely was. Stock it was really stiff," said Spencer of the RS250 he rode. "We got him some softer springs that they put on before he went to Buttonwillow, and that really helped him when he came back here and then went out to Willow. Tweaking the stock suspension and getting it close really helped him, how it was transferring weight." Spencer rode the bike again on the 2.2-mile course Tuesday, January 16, and said that with the lighter springs "The bike steered pretty good, finished the turn well, really had good feedback. It was softer, almost too soft for me, and it was a lot better for Jason."

At least three AMA Buell Pro Thunder races will be run in conjunction with WERA National Challenge Series events in 2001. Three rounds of the Pro Thunder Series were dropped from the AMA Pro Series to accommodate double-header Superbike races, at Road Atlanta, Road America and Mid-Ohio. At press time, plans called for those events to be replaced with Pro Thunder rounds at WERA National Challenge Series races at Portland July 1, Summit Point August 5 and Road Atlanta October 28. A fourth round of the AMA Buell Pro Thunder Series may also be moved to a WERA race. The normal Pro Thunder purse will be paid at the rounds run in conjunction with the WERA races. The move is the first result of a new AMA and WERA cooperative affiliation.

AMA Pro Thunder Champion Jeff Nash condemned the AMA decision to run at least three AMA Pro Thunder races with the WERA National Challenge Series in 2001. In a phone interview with *Roadracing World*, Nash said "You go AMA racing to go AMA Pro racing. I don't see the point of going to WERA races to do AMA racing. I feel it is definitely a step backwards for the class, and I'm surprised and disappointed yet again. I've tried to have an open forum, open communication with them at the AMA the whole time and I've not heard a response. Nobody has ever called me back. It shows how interested they are. I've had many calls from guys in the Pro Thunder ranks and everyone is very disheartened with how we've been treated, the whole lack of communication and lack of respect for the privateers. It's very typical that nothing been discussed with us and no great research has gone into any kind of decision that's been made."

"It's been done totally in-house without any input from anybody in the class, as far as I can make out," continued Nash. "The most basic thing is that you don't even get called back. It's just a matter of respect, as in a business situation; the basic pro-

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On The Front Cover: Racing Editor Chris Ulrich on an Aprilia RSV Mille in slippery, patched turn eight at Homestead, during the 2001 Mille and Mille R press intro. This photo was taken before young Ulrich lost both ends, slid sideways like a kid on an XR100 and was surely saved only by divine intervention. Photo by Tom Riles.

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fessional aspect of returning a phone call, can't even be upheld by the AMA. I don't think (AMA Director Of Professional Competition) Merrill Vanderslice has any professionalism. The whole program, the whole emphasis is to look after 15 factory Superbike riders and screw the rest of us. They forget that the AMA Pro Racing circuit is made up of 400 totally keen privateers who spend every moment they can and every cent they can racing motorcycles, purely for the love of the sport. My earnings for the year, including Championship bonus, totalled \$10,780 for winning an AMA Championship, which wouldn't cover my tire bill. If I had anything positive to say I'd like to say it, but there being no sort of forum or lines of communication open, there's really nothing positive to say about the whole thing. It's been totalitarian bullshit, really. The Russian Motorcycle Association, as per Joseph Stalin. There's nothing good there."

Buell Motor Company Chairman and Chief Technical Officer Erik Buell said January 25 that he knew about proposed changes to AMA Pro Thunder rules and venue prior to their being enacted and had ample opportunity to comment, because he called the AMA and spoke to AMA Pro Racing Director Of Competition Merrill Vanderslice personally. According to Buell, riders who didn't know about the proposed changes should have called AMA officials and asked if any rule changes were pending. Buell was an AMA racer and Harley-Davidson engineer prior to forming the company that bears his name; Harley-Davidson now owns 98 percent of the company and Buell owns 2 percent.

"They notified us before they made the changes (to the Pro Thunder rules)," said Buell in a telephone interview with *Roadracing World*. "I make it a point to talk to them (AMA officials) and just check on things. They didn't call me on the phone. Usually about 2/3 to 3/4 of the way through the season I always want to call and ask what the plans are for next year. That's when they told me they have an issue with the time schedule. The dual Superbike races were becoming a real nightmare with not enough practice time, and they were getting a lot of complaints from riders in different classes. So we had a debate over who would have to move and that it would probably be Pro Thunder. They talked to me about (taking Pro Thunder off of the National schedule) and said that they were considering that. I don't have any final results from them on what they're gonna wind up doing. I think what they do want to do is tie it into WERA more."

AMA Pro Racing officials didn't issue an official announcement of the planned move of three Pro Thunder races to WERA events, but they set off a Pro Thunder uproar when they issued a Competition Bulletin dated November 28 and revealing that Ducati 748s will be restricted to 750cc for the 2001, instead of the 800cc allowed in previous years. Besides winning the 2000 AMA Pro Thunder Championship on a Ducati 748, Nash also owns and runs Advanced Motorsports, a shop specializing in high-performance Ducati parts and work. It might be reasonable to expect that AMA officials would have consulted Nash before making the displacement rule change, but Champion Nash learned of the rule change through the AMA Pro Racing Competition Bulletin he received in early December, just like

everyone else. The trouble is, Nash first heard of the rule change after he had built four new 800cc motors for customers who planned on racing Ducatis in the 2001 AMA Pro Thunder Series.

"For them to make a rule change without consulting anybody is typical AMA," Nash said in a phone interview from his shop on December 27. "I understand that they are trying to make the class equal (for the Buells) and all of that. Whatever we need to do to make the series more interesting, I'm all for it. I think the Pro Thunder class is one of the only classes where a privateer can go ride the AMA. It's popular, a fun class to ride, and it's competitive. But you have to wonder where their thoughts really lay for the future."

Although he is going to work with his future competitors, Nash's 800cc customers are facing \$3000 worth of parts and labor to get back to 748cc. "We never really found any advantage with going to 800cc in the new motor," Nash said. "My bike was a 748. Craig's (Connell) bike was a 748, and he had no trouble whooping everyone. That's basically because of the new motor and its 'shower-type injectors.' I suggested to the AMA that they add a clause to the new rule allowing 1999 and older models be 800cc. The new 748 engine will make as much power as an old-style, 800cc motor. I know more than a couple of guys who have bought used 800cc bikes to get into the class that are now going to require more money and still put them at a disadvantage power-wise from the start."

Nash pointed out that the Pro Thunder class has no representation on the AMA Pro Racing Advisory Board and that riders and teams in general have no opportunity to comment on or object to new rules prior to their announcement. Nash suggested that in the future AMA officials should have meetings concerning future rule changes, and allow affected riders to comment well in advance of the rule taking effect.

AMA Pro Racing officials have a history of making rule changes without timely notification of racers prior to the rule change taking effect, either without considering—or simply ignoring—the impact on all competitors, another AMA racer charged. In an e-mail sent to AMA Pro Racing National Tech Manager Rob King and copied to *Roadracing World*, racer Dr. Michael Dube, MD, wrote "I raced several rounds of Pro Thunder in its inaugural season in 1998, on a 750cc Honda Hawk, and was looking to step up to a more competitive bike for 1999. I began work on an 850cc SuperHawk project just before the rule change to allow Ducati 748s was announced. I complained to you at the time that it would result in 748s dominating the class, and suggested several things, including limiting them to 750cc. Unfortunately, my 850cc SuperHawk proved uncompetitive in PT in 1999. Again at the end of the 1999 season, I made some suggestions regarding displacement (limiting the 748s or increasing the limits on non-desmo Twins). When it became apparent that these suggestions were not going to be taken, I made the jump to an 800cc Ducati for 2000. I had more success, with my personal season highlight a fifth place at Willow Springs. Just before Willow, I had a second 800cc motor built, as a spare and looking forward to Daytona. I think you can imagine my disappointment upon hearing the recent announcement that desmo Twins would be limited to 750cc for 2001. This will not, as you suggest, reduce costs. It will cost no more to take a stock 748 and build a full race motor under the new rules than it would to build an 800; in fact it might very well cost more as racers attempt to match the output of an 800cc motor. It will also be very costly for me (and others) to downsize an 800. I estimate at least \$4000 per motor to downsize my two fresh, Daytona-ready 800s.

"As soon as the 2001 schedule was announced this past fall," continued Dube, "I began arranging my work, vacation and on-call schedule to accommodate racing at five rounds: Daytona, Road Atlanta, Road America, Mid-Ohio and Virginia. I sat down to complete my Daytona entry and noted that there were now no PT rounds scheduled at three of those five events. It is neither feasible nor rational for me to invest the money required to downsize these 800cc motors to participate in just two AMA rounds in 2001. All of my racebike investments towards the end of 2000 were geared towards continuing (with) the same equipment in 2001. It does not appear possible for me to compete in the AMA again in 2001 under the current rules and schedule, which was to be my final year of racing at the National level at age 42. To say I am angry is an understatement. If there is any chance that you will consider rational arguments as to why these changes should be reversed, I will be happy to share them with you."

Outrage over last-minute changes in AMA Pro Thunder rules continued to escalate in January, with several racers charging that AMA Pro Racing seems determined to kill the class for good. Typical reaction to the changes announced in a November 28-dated bulletin that reached racers in December came from racer and AMA Charter Life Member Mark Hatten, who told *Roadracing World*, "I raced Pro Thunder at Mid-Ohio in '99 and '00 on my BBM 500 (a 500cc Honda Single in a TZ250 chassis). I did okay for a 200-pound guy on a 50-horsepower Thumper, finishing 15th in '99 and 19th in '00. Both my racing partner and I bought Ducati 748s this past fall with the idea of doing all the 2001 AMA races east of the Mississippi (we're in Ohio). Like most folks, I first read about the rule changes on the internet. Even after being directed to the AMA website, it was very difficult to find the rule change announcement. The release was dated November 28th, it popped up on the internet about a week later, and I finally received the bulletin in the mail three weeks later (I live about 30 minutes from AMA headquarters)."

Hatten included a message he sent to AMA Pro Racing, which read, in part, "I still can't believe...that changes this sweeping were made a mere three months prior to the first race of the season. It's no secret that the majority of 748s running in the class are running at 800cc. While I don't disagree with restricting the Ducatis to 750cc, I strongly disagree with making this change 90 days before the start of the season. Do you realize what is involved in this change? Cylinders—rebored and plated. New pistons. Crank rebalanced. Fuel injection Eprom change. Head modifications. To change that back, you have new cylinders (\$1500), pistons (\$600), crank rebalance (\$300), fuel injection Eprom (\$200). If you've increased the valve size to take advantage of the larger bore, add the cost of a new set of heads into the equation (minimum \$1000 used). That's \$3600, excluding the labor, to make a bike legal for the first race in three months. Sure, maybe you can sell the used pistons/cylinders/heads to offset some of the costs, but I don't think there will be a bull market on used, now-obsolete 800cc parts. This doesn't seem to me to be achieving your stated goal of 'help reduce costs.' Again, I don't disagree with the new displacement limit—in fact, I wondered why it was raised to 800cc in the first place. I do disagree with making this change so late in the game. Other sanctioning bodies try to give advance notice when making such a substantive change. Perhaps now would be the time to announce this change for the 2002 season? By imposing a 380-pound weight limit on the entire class, you've eliminated any single-cylinder motorcycle from the class. I finished 15th in 1999 and 19th in 2000 on my 250-pound Single. Sure, I wasn't anywhere near

the front (although Ducati SuperMonos and the Wood-Rotax bikes have run in the top five before), but I was one more bike on the grid, and added some interest to the class. You've also eliminated those folks who ran two-valve Twins like 900 Ducatis (including Squalos, Bimotas), who use light weight (approximately 320 pounds) to try to overcome sub-100 horsepower. Not to mention the SV650s, Honda Hawks, etc. etc. Did you really mean to do this?"

"Aside from narrowing the field down to two motorcycles, the 380-pound weight limit really doesn't impact the majority of the riders on the 748. Other than a few of the class leaders, you'd be hard-pressed to find too many 748s that are under 380 pounds. It takes a boatload of carbon-fiber, magnesium and money to get a 748 below that.

"I realize the AMA takes heat no matter what they do," continued Hatten. "Hell, I worked for Pro Racing way back when, so I know what it's like from both sides of the table. But it's decisions like this, that appear to be not-too-well-thought-out and made without perhaps fully realizing the ramifications, that make me join the rest of the people out there who scratch their heads and say, 'What the hell was the AMA thinking?'"

In responding to racer inquiries, AMA Pro Racing Director of Competition Merrill Vanderslice admitted that "since the inclusion of the Ducati 748, Pro Thunder has certainly suffered competition-wise. These new regulations are aimed at pulling some of that back and keeping this class viable. We believe that the weight requirement is an achievable minimum for the motorcycles that are truly competitive...It is our opinion that the SV650 is much more limited by its displacement than by this weight requirement. A change was clearly needed to help level the playing field and keep this class viable. One can never be sure that an overall weight requirement is the answer, but it has worked for us in Superbike and Formula Xtreme."

In his specific message to Hatten, Vanderslice stated that he really didn't think "the rest of the people out there" are scratching their heads and wondering "what the hell was the AMA thinking", and that he thought Hatten could join that small group or Hatten could look at the big picture and realize that the days of Pro Thunder are limited if there isn't more multi-brand competition up at the front of the class.

Vanderslice's reply made Hatten wonder: "Considering that a total of three non-Ducatis made it to the podium (two thirds and one second) in Pro Thunder in 2000...why it took until November 28 before this decision was made. If it wasn't obvious at the end of 1999 that the 748/800 was the bike in the class, shouldn't have the light gone on sometime during the 2000 season?"

Hatten continued, "If the AMA doesn't think another season of one-brand competition is going to be healthy for this class, how in the world will a 380-pound weight limit, which will basically eliminate any bike other than the 748 and the few Buells that show up, do anything but ensure Pro Thunder is a one-bike class? You've basically eliminated all the other bikes, and you certainly aren't going to find people jumping ship from Ducati to Buell. Vanderslice said if they don't get some close competition up at the front with more than one brand in this class, its days are probably numbered," wrote Hatten. "Seems like they've created a self-fulfilling prophecy to me. BTW, after cooling down (barely) regarding the short-notice displacement and weight changes, I recently learned they've dropped Pro Thunder at the three most popular AMA week-ends—Mid-Ohio, Road America and Road Atlanta. How did I discover this? From the AMA website? A Pro Bulletin sent to license holders? Nope. As always, they sent

a season entry form with the new year's license package. Careful inspection of the 10-point type on the entry form showed there was no 'PT' box to check for those three races. Sigh."

The effective date of a new AMA rule banning the use of hydraulic, pneumatic and electric quick-lift devices in pit stops during AMA Superbike races has been postponed until 2002. In a December 29 e-mail responding to a question from *Roadracing World*, AMA Road Race Manager Ron Barrick wrote "The Pro Racing Board decided that the implementation of the rule regarding powered stands be delayed until the 2002 season due to the fact that some teams had started preparing equipment for 2001 with the 2000 rule in mind." The reversal of the powered-lift rule apparently came about because members of the AMA Pro Racing Board of Directors listened to complaints from factory Superbike teams. No word if the same reasoning will be applied to the rule change limiting Pro Thunder displacement to 800cc instead of 750cc.

In off-the-record communication with *Roadracing World*, several members of the AMA Pro Racing Board of Directors have mentioned planned revisions in AMA rule-making procedures, including timely notice and an opportunity for participants to comment before rules are approved and finalized. But AMA Pro Racing has not made any official, public announcement of any such revisions, which are strongly opposed by AMA Pro Racing staffers, who claim that all the required input can be had from the Road Racing Advisory Board. Critics point out that the Road Racing Advisory Board is hand-picked by AMA Pro racing staffers and is non-representative of the paddock at large, with several groups of what AMA Pro Racing likes to call "stakeholders" being ignored in favor of members

affiliated with factory Superbike teams.

Nevertheless, AMA Pro Racing staffers have denied culpability in the late announcement of rule changes that have enraged Pro Thunder competitors. Speaking on condition of anonymity, a high-ranking AMA Pro Racing official placed the blame for the late rule changes squarely on the shoulders of the AMA Pro Racing Board of Directors. According to the official, the recently announced changes in Pro Thunder displacement and weight rules were presented to the directors mid-year but were not acted upon until late last fall. "They hire us to do a job, and then they don't let us do what we want to do. They second-guess everything we say and do, and they don't know what they're talking about," said the official. "Then when the shit hits the fan, we get blamed and people say we're not professional. It's not us, it's these guys on the board of directors who don't know anything about racing." A member of the AMA Pro Racing Board of Directors reached by *Roadracing World* and asked about the charges declined to comment on the record.

Criticism of AMA rules and rules enforcement isn't limited to Pro Thunder competitors. Attack Performance Racing owner Richard Stanboli told *Roadracing World* that an AMA ruling on what constitutes a legal Formula Xtreme bike is vague and confusing, and allows the type of subjective enforcement that is typical of AMA Pro Racing. A new rule for 2001 requires that at least 50 percent of the frame of an eligible machine be used, but the rule doesn't define how "50 percent" is measured. "I asked for clarification on the new rule," Stanboli said. "Is that volume, mass, weight, length, surface area? They didn't really clarify it as much as I would've liked." Instead, Stanboli said, AMA officials told him that the Yamaha YZF-R1/R7 hybrid he built for

the 2000 season and is now trying to sell would be legal even though Stanboli admits that it has nowhere near 50 percent of the original YZF-R1 frame by any possible definition. According to Stanboli, the AMA men said that they just needed to see 50 percent of the original frame to determine that it is from the original, eligible motorcycle. "This class was designed to be an unlimited class with unlimited modifications," said Stanboli. "It's based around the fact that you could run a big engine in a small chassis like the old 7/11 Suzukis. We went after that class with the same intention. Now they've muddled up the water even more. Now that all of the major motorcycle manufacturers have 1000-based motorcycles that are competitive, the AMA can go one of two ways. They can say screw it and say that they all have to be 1000-spec motorcycles and have Superbike-type frame rules that say that you can add bracing but can't remove. Or they can say, I don't care if you build a prototype chassis as long as the engine comes out of a bike that is a legitimate streetbike. But they just said that they need to see 50 percent, which makes it real subjective. Either the rules are made to give those guys a lot of discretion, or they didn't think it through."

Meanwhile, Race Directors, Referees and Safety Directors from all regions of the country met January 19-21 in Fort Worth, Texas for a three-day National Operational Summit designed to streamline and standardize at-race operations at Formula USA and CCS events nationwide. Formula USA and CCS are owned by SFX Motor Sports Group, part of SFX, which in turn is a subsidiary of Clear Channel Communications. SFX claims to be "the world's largest promoter, producer and presenter of live entertainment events." According to a press release

issued by SFX Motor Sports Group, "The focus of the first annual Formula USA summit is continuity of the Formula USA program nationwide, communication, customer service, and of course safety. The first of its kind program will fly in dozens of full-time and part-time officials well in advance of the season, resulting in a cohesive race management team creating a familiar, quality expectation for both racers and spectators at CCS and National Road Race events." The release quoted SFX Motor Sports Group Road Race Manager Ken Abbott as saying "This is an attempt to unify all of our CCS regions and associates nationwide to insure that the programs from one region to another are consistent. We are also trying to raise the bar for safety and develop consistent safety procedures when dealing with anything from fallen riders, weather-related decisions, or pit road and paddock speeds. We also want to instill the entertainment value of what we do week-in and week-out. If we concentrate on having fun, and providing quality entertainment for spectators, with the participation of riders, teams and sponsors, then we will see the sport grow exponentially over the next few years."

The back-straight crest at Road Atlanta has been lowered and smoothed out to decrease the chances of cars losing downforce and flipping over backwards. The crest was formed during construction of the track in 1970, when crews encountered a rock formation and paved over it instead of removing it, due to time considerations and an approaching Can-Am car race. During the years at least four race cars have flipped over backwards at the top of the crest. Work to smooth the crest began at Road Atlanta the week before Christmas and was com-

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continued from page 13

pleted early in January. The crest is now about 4 feet lower and the transition from the crest to the rest of the straightaway is smoother.

Summit Point Raceway has reached a compromise agreement with a group opposed to expansion of the Summit Point, West Virginia racetrack and will modify its operations to mollify the group. The anti-track group, Citizens Against Raceway Expansion (CARE) had proposed severe limits on operations and had challenged plans to expand the track, asking that operations be limited to between 9:00 a.m. and 5:00 p.m. on weekdays and Saturdays and to between noon and 5:00 p.m. on Sundays, with a dB(a) limit of 65. (For reference, most tracks with noise rules limit racing vehicles to between 102 and 105 dBa). But just as a Jefferson County Planning Commission hearing on the matter was starting in Charles Town, West Virginia on January 17, it was announced that the compromise had been reached. Details of the agreement were not revealed although a spokesman said that the track has agreed to certain restrictions on hours of operation and sound levels, which will be revealed after the deal is finalized and signed. The track had been seeking permission to expand by building a new 2.0-mile road course in addition to the existing main racetrack and adjacent Jefferson circuit, which is mostly used for schools and track days. The main course is heavily booked for driver training programs catering to police and federal agencies.

Meanwhile, opponents of a proposed new racetrack in Lake Elsinore, California continued to wage a vicious smear campaign based on disinformation and scare tactics, including claims that allowing the complex to be built would cause nearby property values to plummet, produce catastrophic pollution levels, attract drunken race fans who would clog city streets and run down citizens, and generate extreme noise that would be heard 15-20 miles in every direction. Opponents also claimed that the track would not be financially viable and could not possibly attract enough business to stay afloat. The initial public comment period on the track's Environmental Impact Report ended January 25.

Formula USA and GPRA have announced their association for the 2001 season. According to a January 12 press release issued by Formula USA, "SFX Motor Sports Group announced today an agreement to partner with Grand Prix Riders Association (GPRA) for the promotion and operation of the GPRA 125cc GP and 250cc GP National Championship events held in conjunction with Championship Cup Series (CCS) and the Wrenthead.com Formula USA National Road Race Series (NRRS) events. Also announced is (sic) the GPRA Eastern and Western Region schedules. Championships will be earned in both 125cc GP and 250cc GP classes in both regions, with the National Championship Final being held at Daytona International Speedway on October 19-22, 2001."

The press release quoted race Chris Wallace, GPRA Director of Operations, as saying "GPRA is excited to be involved with SFX Motor Sports Group on our events in 2001. This partnership will benefit those dedicated riders of Grand Prix machinery with increased exposure and purses." The release also quoted former racer Bill Syfan, Director of Road Racing For SFX Motor



The back-straight crest at Road Atlanta has been lowered about 4 feet and the transition made smoother. These photos show work in progress in December and the finished and repaved section of track in January. Photos by TIW Photography.



Sports Group, as saying "Partnering with GPRA will help put true Grand Prix equipment and racing in front of a wider audience and will help expand the popularity of Grand Prix racing across the country." The release went on to state "In the partnership, SFX will be responsible for licensing, registration and scoring of GPRA classes held in conjunction with CCS or NRRS events. GPRA will be responsible for purses, contingencies, trophies and prizes at all events. SFX and GPRA will share in the promotion and marketing of the GPRA series." The release listed GPRA Western Region dates April 19-22 in conjunction with a Formula USA round at Willow Springs, April 28-29 in conjunction with a CCS race at Thunderhill, June 30-July 1 in conjunction with a CCS race at Buttonwillow, August 4-5 in conjunction with a WMRRS race at Seattle and September 7-9 in conjunction with a Formula USA race at Portland. Eastern Region dates listed included March 1-4 at Daytona with Formula USA, April 27-29 with CCS at Road America, June 2-3 with CCS/GLRRA at Grattan, June 29-July 1 at Virginia with Formula USA and August 24-26 with Formula USA at Pocono. The GPRA National Championship Final will be held October 18-21 at Daytona, with the Formula USA final and CCS Race Of Champions.

Aprilia U.S.A. spokesmen have confirmed that they will back two independent race teams in 2001, one being Pennsylvania-based Blackmans Cycle and the other being Arizona-based Buona Fortuna Racing, a new team formed by 2000 Aprilia Cup Challenge Champion Aaron Clarke and Crew Chief Gary Stiles with secondary sponsorship from Pro Italia. Aprilia officials

have stressed that the two teams are independent operations and are not factory efforts, and that the support provided by Aprilia USA consists of bikes and parts with a limited cash contribution. Stiles and Bill Himmelsbach, the Crew Chief for Blackmans Cycle, attended the Aprilia RSV Mille and Aprilia RSV Mille R press intro at Miami-Dade International Speedway in Homestead, Florida on Tuesday, January 16. The two teams will both use RSV Mille R models to campaign in the Formula USA Unlimited Superbike Series. Blackmans' primary rider will be Mike Himmelsbach, with Chris Carr also riding a Blackmans bike at both Daytona races and Tray Batey riding a Blackmans bike at all six Formula USA events. The Buona Fortuna machine will be ridden by Clarke, who credits much of his 2000 success to working with Stiles.

Blackmans Cycle spells its name without an apostrophe even though the original founder was Leon Blackman, who started the business in 1956. The company is owned by Kathy Blackman-Bickford, widow of Gary Blackman, who ran the business from 1976 until he died in a plane crash in 1997. Gary and Kathy Blackman's son, Mark, works in the parts department at Blackmans, which sells Aprilia, Ducati, Honda, Yamaha, Suzuki, Kawasaki, BMW and Triumph. Kris Bickford, the Blackmans Cycle Race Team Manager, is married to Kathy Blackman-Bickford.

Czech immigrant Vincent Haskovec bailed out on a deal to ride the Blackmans Cycles Aprilia RSV Mille R in the Formula USA series on January 18, days before flying to Pennsylvania and signing a contract. Bickford had already sent Haskovec a plane

ticket to appear at an open house at the multi-line dealership and sign the paperwork when Haskovec called and reneged on the deal; Batey signed a week later. Speaking on January 20 at Willow Springs Raceway where he was attending a WSMC event, Haskovec said he called Bickford and called off the deal after EBSCO Media's Landers Sevier said that he was putting together a Corona Beer and Suzuki-sponsored AMA 600cc and 750cc Supersport team including Haskovec, Jimmy Moore and young gun Tony Meiring. Meiring and his father confirmed at Willow Springs that Sevier had also contacted them with the same information. Haskovec said, "I feel really, really bad for the Aprilia guys. But what can I do? It's been my dream since I came to America to race in AMA." Haskovec said that he did not know any more details of the EBSCO deal and that he had not signed any papers. *Roadracing World* was unable to contact Sevier prior to presstime, but sources at American Suzuki said that as far as they knew nothing had been finalized for the deal. When Moore was contacted and asked if he was riding for Corona EBSCO Suzuki in 2001, he replied "Still not sure. I'll let you know when I am."

In a drawing at the WSMC 2000 season awards banquet held January 20 in Lancaster, California, Haskovec won a 2001 Toyota Tundra V8 extended cab pick-up truck, and told the crowd in accented English, "I cannot believe it, mon! I am flying!" WSMC members received one entry in the annual truck drawing every time they finished in the top 10 of a Formula One race. WSMC also held a drawing for the top five in Expert points in each class, awarding a Specialized mountain bike to Chip Hilliard. In a drawing for riders who finished between 11th and 99th in overall WSMC points, Curtis Adams won a home stereo system.

Several Suzuki support teams have switched focus for the 2001 U.S. racing season, with Arclight Suzuki Racing concentrating on the Formula USA Series with riders Lee Acree and Brian Parriott, and Arclight replaced in the WERA National Endurance Series by Vesrah Racing with riders Mark Junge, Glenn Szarek and Chris Ulrich. Arclight will run on Pirelli tires and Vesrah on Metzeler tires. Arclight will compete in the entire Formula USA Series and will also enter selected AMA events, running GSX-R750 and GSX-R600 Suzukis. Vesrah, meanwhile, will run a GSX-R1000 in the WERA National Endurance Series and will enter Junge in the Unlimited Superbike and Sport Bike classes at non-conflicting Formula USA events. Ulrich will run the entire Formula USA Series on a GSX-R750, as well as competing in selected AMA 750cc Supersport events. Arclight won the 2000 WERA National Endurance Championship with riders Acree, Tray Batey, Scott Harwell and Chris Hughes, and Acree won the Formula USA Sport Bike Championship on one of the team's bikes, using Pirelli tires. Vesrah won the 2000 WERA 24-Hour West, with riders Szarek, Ulrich, John Jacobi, David Rose, David McGrath and Joe Prusiano, on a GSX-R750, also using Pirelli tires. Szarek co-rode to the 1998 and 1999 WERA National Endurance Championships with SBR.

World Sports will field Jimmy Filice in the 2001 AMA 250cc Grand Prix Series with backing from Mike Corbin, a manufacturer of custom motorcycle seats and electric vehicles. The official team name will be Team Corbin Racing. World Sports owner James Siddall, himself a former racer, will manage the effort and has signed Ed Toomey as race engineer and Mike Montoya Sr. as mechanic. The combination of Filice and Toomey won the AMA 250cc Grand Prix Championship in 1991 and 1993. Filice has won 23 AMA 250cc Grand Prix races as well as winning one 250cc World Championship Grand Prix race at Laguna Seca and winning a Ducados Open

250cc race at Jerez. He has also won four AMA Grand National dirt track races. World Sports won the AMA 250cc Grand Prix Championship with rider Chuck Sorensen in 1999 and 2000. Sorensen is now riding for GP Tech Yamaha in the AMA series.

Derek MacKelvie King's ride with GP Tech Yamaha for 2001 has fallen apart, and King is looking for another ride. "It was just some internal disagreements," said King, who finished second in the 2000 Aprilia Cup Challenge Series and won an AMA 250cc Grand Prix race at Loudon in 1999. "We couldn't come to contract agreements and just went ahead with Chuck Sorensen for the year and more than likely we're gonna have Simon Turner riding also," said GP Tech Yamaha Team Owner Geoff Maloney when asked about King. Maloney had earlier issued a press release announcing that the team would run Sorensen and King. Turner, 31, finished sixth in the 1998 British 250cc Series and had four podium finishes in the 2000 Irish Stock Sport Series, as well as winning an international Superbike race at Mondello Park. Turner also has experience riding a Honda NSR500V, and sampled racing in the Southeastern U.S. in 1999 while riding under the Irish Bike magazine banner.

GPRA 125cc Grand Prix Champion Vicky Jackson-Bell will campaign an Aprilia RS250 and a Honda RS125 in the 2001 Formula USA Series, competing in the Aprilia Cup Challenge and GPRA 125cc Grand Prix classes with sponsorship from Cruise America. Vicky Jackson-Bell, 36, of San Juan Capistrano, California, won the GPRA 125cc Grand Prix Championship in 2000, won the 1998 WSMC 125cc Grand Prix Championship, finished second in the 1998 AMA 125cc GP Exhibition Series and finished second in the 1996 and 1997 NASB 125cc Grand Prix Series. Bell's husband and tuner, Tony Bell, is a partner in Spectrum Motorsports, a new Honda and Aprilia dealership located in Lake Forest, California.

New Zealand Open and 600cc Sports Production Champion Tony Rees is looking for a ride in the United States, according to Jonathan Bentman, Editor of Kiwi Motorcycle Rider magazine. Rees, 33, has dominated Sports Production-class racing in New Zealand since 1996, finished third in last season's Australian Formula Xtreme Championship, has ridden for the Phase One team in the Endurance World Championship Series and qualified on pole for the Eastern Creek (Australia) 6-Hour, Bentman reports. Interested teams can contact Rees through Bentman at 011-64-9-416-5307, FAX 011-64-9-416-5308.

Alice King, a former racer, is the new Press Relations Manager for Ducati North America. King, 36, owns three racebikes and last raced two years ago with LRRS, primarily riding FZR400 Yamahas with a Junior classification. (LRRS is unique among U.S. sanctioning bodies in that it currently has an intermediate rider ranking between Amateur—or Novice—and Expert.) King takes over press duties formerly handled by Gary Schmidt, who had been doing double-duty by handling press relations and advertising for the New Jersey-based company. Schmidt is now concentrating on advertising for Ducati North America.

According to knowledgeable insiders, three-time World Champion Freddie Spencer and company will take over distribution of Michelin racing tires in the western United States. The sources say that Spencer's long-time association with Michelin and his successful riding school business made him a natural to take over the distribution duties abandoned by Graves Motorsports. Michelin spokesman Randy Richardson would not comment on Michelin's race tire distribution plans for the Western United States at presstime, but said that a

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6/12-13 Loudon, NH*
7/6 Loudon, NH
7/13 Mid-Ohio
7/20 Rousch Creek, PA
7/27 Loudon, NH
8/10 Rousch Creek, PA
8/17 Loudon, NH
8/29 Loudon, NH**
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a great, sleek look that makes them appear to be going fast even when standing still. The paint on the Suzuki GSX-R600 didn't hold up well to road debris and people brushing against it, but the big GSX-R1000 didn't show the same wear as its baby brother. The Suzuki GSX-R1000 has metallic flake in some of its graphics, and it really glimmers in the sunlight. Together with the 1000's golden fork legs and new six-piston brake calipers, the big, bad GSX-R1000 is the best looking Suzuki yet, even though it was the only one of our test bikes to have hard-to-clean white wheels.

Gaudino and I spent the most time on the YZF-R1 and GSX-R1000, trading off at intervals while Daniel, Sorbo and Ulrich did the same on the 600s. Late in the afternoon on the run down Palomar and back to Lake Elsinore, everyone swapped around on all five bikes, giving all five riders at least a sampling of each machine.

First impressions of the 1000s included the fact that neither one's windscreen provided great wind protection, and both had mirrors that worked reasonably well. Beyond that, the Yamaha had enough vibration coming through the bars to numb the hands, but at the same time, had the more comfortable riding position. Gaudino complained of his lower legs cramping on the Suzuki. Where the Yamaha had the raciest riding position in last year's Big Bore Brawl, it now felt like a tourer compared to the GSX-R1000, proving again that everything is relative. Still, the GSX-R1000's riding position is nowhere near as extreme as, for example, a Ducati 916/996, and it is possible to ride the big Suzuki for 50 miles straight without a problem.

But the overall, immediate, biggest impression was instantly made by the GSX-R1000, and can be summed up in two words: Big Power. It didn't take much time to figure out that this was a battle of unequals in the horsepower department. The new Suzuki has transformed the R1, the previous sportbike power title holder, into an anemic has-been.

The amazing thing is that even on slushy mountain roads where the rider is worried about unexpectedly coming upon an underlying layer of ice, these two 1000s are not unmanageable beasts. Each could be ridden in slow, tight, tricky conditions without trouble. The Suzuki's power is smooth, broad and instantly available, although it is easily applied and controlled, and the fuel injection doesn't have any off-idle abruptness. The Yamaha had a small amount of off-on hesitation despite being equipped with carburetors, perhaps because it takes lean jetting to meet current emissions standards with carburetors. Whatever the reason, it's hard to beat the combination of the Suzuki's fuel injection system and its taut transmission and driveline.

Neither 1000cc bike is just an engine with a seat and clip-ons. Each bike possesses brakes and handling to match the potent motor. Changing directions suddenly, hard braking, altering the line unexpectedly mid-corner, nothing



Running turn three at Willow Springs backwards for photos, Ed Sorbo on the YZF-R6 leads Roland Sands on the CBR600F4i and Chris Ulrich on the GSX-R600. Photo by John Ulrich.

made these bikes nervous on the street. The Suzuki's turn-in felt light, almost instantaneous, and one rider said it seemed like just turning his head initiated the turn, although the bike felt stable while leaned over. The Yamaha also felt stable when leaned over, but needed more effort to initiate a turn. The Yamaha's suspension also felt softer on its from-the-factory settings whereas the Suzuki's suspension felt firmer, like a racebike's.

Gaudino and I did a series of roll-ons, with me on the Suzuki and Gaudino on the Yamaha. We're both relatively big guys; I stand at 6'2" and weigh 270 pounds, while Gaudino is 5'10" and weighs 215 pounds. We did roll-ons in third, fourth, and fifth gears, starting at about 40 mph and turning the throttle wide open. In third gear, Gaudino jumped out front early but the Suzuki and I pulled the distance back and passed well before redline. In fourth gear, it was my turn to get the early lead. As the revs rose, my lead grew larger and larger. In fifth gear, it was more of the same, a trouncing for the Yamaha, with the Suzuki leaving it behind so quickly that for a split second Gaudino thought the Yamaha must have jumped out of gear!

Perhaps the ultimate demonstration of the Suzuki's power came on the trip home. After my now-customary first-and-second-gear wheelie up the freeway on-ramp, I clicked the GSX-R1000 into third gear, merged into traffic, and waited for our group to gather up. The Suzuki wasn't exactly revving out at 80 mph in third gear, so I deferred my upshift and then decided to see if the Suzuki would power-wheelie in third gear. It would. From 8000 rpm and 80 mph in third gear, the Suzuki would power the front wheel off the ground with just a snap of the throttle! No pulling on the bars. No rises in the road. Just snap open the throttle and hang on! Gaudino tried to mimic this feat on the Yamaha in vain and even had trouble getting the combination right in second gear. Yeah, yeah, wheelies in traffic on the freeway are not responsible,

yadda yadda yadda. But they're still fun, and so is the Suzuki GSX-R1000.

On the 600cc side it was much closer. The YZF-R6 mirrored its bigger brother with buzziness in the handlebars but got relatively good marks for wind protection and suspension that was pretty good even on repetitive freeway expansion joints. The YZF-R6 is built to feel like a TZ250 racebike, according to Yamaha engineers, and its narrow tank, short reach to the bars and high footpegs actually do accurately re-create the feel of a racebike. That's good at speed, a little less good in town, and at slower speeds the rider has to support his or her weight on the handlebars, which have a somewhat extreme angle. Still, our panel of racers liked the R6's seating position, perhaps because they like going fast. And the R6's mirrors provided a clear image, albeit one partially blocked by the rider's elbows.

In what is perhaps a tribute to rapidly accelerating technology, the YZF-R6 had the worst off-on throttle hesitation and associated jerkiness, due to a combination of lean carburetion and the most driveline snatch. The two fuel-injected bikes were far better, Honda engineers using extremely accurate fuel injection programming and minimal slack in the transmission and driveline to match the Suzuki's dual-throttle-valve fuel injection system and equally taut transmission and driveline in terms of off-on response. The one advantage carburetors give the YZF-R6 is the ability to backfire on command; hitting the kill switch, blipping the throttle twice, waiting a moment, then turning the kill switch back on produced a satisfying "Boom!" that sent stray dogs and joggers scattering, along with a long flame visible under

highway overpasses. The injected bikes don't play that game, because fuel delivery stops the instant the kill switch is hit.

Like the Yamaha YZF-R6, the Suzuki GSX-R600 has a riding position biased toward going fast, with a narrow tank and high footpegs, but with a longer reach to the bars. The mirrors are blurred by vibration at highway speeds and beyond, yet the bars don't buzz as much as the Yamaha's. If nothing else, that's a commentary on the challenges engineers face when seeking to control apparent vibration. The Suzuki has a distinct intake howl, which makes it sound louder from the seat than the others, and its suspension is harsher than the Yamaha's. The Suzuki's throttle response is better than the Yamaha's, and the transmission and driveline feel less sloppy. Its fairing provides better wind protection than the Yamaha's. And the Suzuki had the quickest turn-in and ability to change direction of the three, with one tester commenting that every time he started looking at the scenery he found himself drifting out of his lane, in the direction he was looking.

The Honda has good wind protection but the tank is wider at the knees than the tanks on the other 600s and the seating position is more upright. That makes the Honda easier on the wrists at legal speeds but forces the rider to pull on the bars at speed, and the more-splayed-knees riding position felt awkward after getting off the Yamaha or Suzuki. The Honda feels and looks refined in every way, from fit and finish to throttle response, which made its one control and instrumentation flaw more surprising: The clutch cable is routed so it runs right in front of the digital speedometer,

Tire Comparison Charts And Required Changes To Maintain Geometry

Bike	OEM Tire Brand (Size Variation)	Circumference F/R, mm	Radius F/R, mm	Change Made
YZF-R1	Dunlop D207 (190/50 rear)	1892/1965	301.25/313.0	+13 mm
GSX-R1000	Bridgestone Battalax (190/50 rear)	1888/1972	300.6/314.0	+11 mm
CBR600F4i	Michelin Pilot Sport (180/55 rear)	1892.5/1980	301.3/315.25	+11 mm
YZF-R6	Dunlop D207 (120/60 front)	1822.5/1968.5	290.2/313.5	+2 mm
GSX-R600	Dunlop D207 (120/70 front)	1892/1968.5	301.25/313.5	+13 mm

Test Tires: Metzeler RS1, RS2 (120/70, 180/55) 1836/1992 292.35/317.2

blocking half the displayed speed numbers.

Bike	Street Trip Fuel Mileage	
	1st Refueling/2nd Refueling	
YZF-R1	37.1/44.6 mpg	
GSX-R1000	38.0/41.7 mpg	
CBR600F4i	43.3/43.5 mpg	
YZF-R6	44.6/46.3 mpg	
GSX-R600	44.6/44.5 mpg	

Street Conclusions

For the 1000s, deciding which bike is better was easy. The GSX-R1000 does everything that the YZF-R1 can do, only better. Add in the Suzuki's truly incredible motor, and you have a winner. The YZF-R1's strongest point was highway comfort, but that was flawed by vibration through the handlebars. There may be better street-bikes in the world, but the fact that you could use either one of these tame-yet-monstrous bikes as a daily ride is still amazing.

It wasn't as simple on the 600cc side. Sorbo, who stands 5'6" and weighs 150 pounds, preferred the Yamaha YZF-R6, saying "I don't have to pay attention to the bike to ride it." Sorbo ranked the Honda second and the Suzuki last for street use, saying it took more attention to keep the Suzuki going where he wanted, had too long a reach to the bars and made his wrists hurt.

Daniel, who stands 5'6" and weighs 150 pounds, preferred the Honda, saying "I could ride this bike for a long distance; it felt like everything was together." Daniel ranked the Yamaha second and the Suzuki last. Her complaints about the Suzuki included what she termed "its lack of refinement", specifically citing vibration and an uncomfortable seating position.

Ulrich, who stands 5'11" and weighs 155 pounds, liked the overall feel of the Yamaha at speed but hated it at legal speeds, when he said its handlebars made his wrists ache, and complained about the R6's driveline snatch and off-on throttle response. But Ulrich ranked the Yamaha tops in city entertainment value due to its ability to back-fire. Ulrich also disliked the Honda's relatively wide gas tank, seating position and seat. Pressed to make a decision, Ulrich said he'd skip the 600s altogether and pick the GSX-R1000 because, when he swapped from the GSX-R600 to the GSX-R1000 halfway down Palomar, the 1000 handled and felt like the 600 but with twice the power. His vote was discarded and Yamaha YZF-R6 declared the 600cc street ride winner on the basis of Sorbo's and Daniel's votes.

F--king Track Testing

For our track testing we adjourned to "The Fastest Road In The West," Willow Springs Raceway, a high-speed 2.5-mile road course made up of mainly high speed corners—the slowest turns are taken in third gear—with little hard braking required. Willow rewards the ability to reach and carry high speed, demands quick direction changes, and produces cornering loads through turns two and eight that are not seen at other racetracks. Plus Willow is close to home.

For our track testing, we enlisted Roadracing World Racing Editor Chris

Ulrich (5'11", 170 pounds), crazy former AMA 250cc Grand Prix Champion Roland Sands (5'8", 150 pounds) and experienced, longtime racer Sorbo (5'6", 150 pounds).

We started by having each rider spend several laps with each bike in its original set-up. In the case of the Honda, it started with a racetrack set-up recommended by 1993 Endurance World Champion Doug Toland, a Honda employee. In the case of the Yamaha, it started with a racetrack set-up developed by Chris Ulrich during a press intro at Willow Springs. In the case of the Suzuki, it started with a race-track set-up developed by Sam Fleming and crew at the GSX-R600 press intro and our Daytona comparison test.

From the start, the Honda was clearly fighting an uphill battle. After

his first session on the Honda, Sands came back in with both footpegs and the muffler of the CBR600F4i ground down severely, and said "It seemed to work pretty well. It runs really good. It just feels soft everywhere. I was scraping the pipe in a couple of places. That was kind of unnerving. I feel like I could go through turn eight pinned if the pipe wasn't there. I was going through there pinned once and I hit that bump. The pipe hit and the front tucked. I picked it up, but I was kind of over going through there flat in sixth. As soft as the rear suspension was, I thought it was going to move around a lot more than it did." Comparing the F4i to the F4 he rode in our 1999 600cc comparison, Sands said, "It feels better than the old F4. It feels a little lighter. It's a little bit more stable. It's less wal-

lowy than the old F4. The fuel injection and the motor are great."

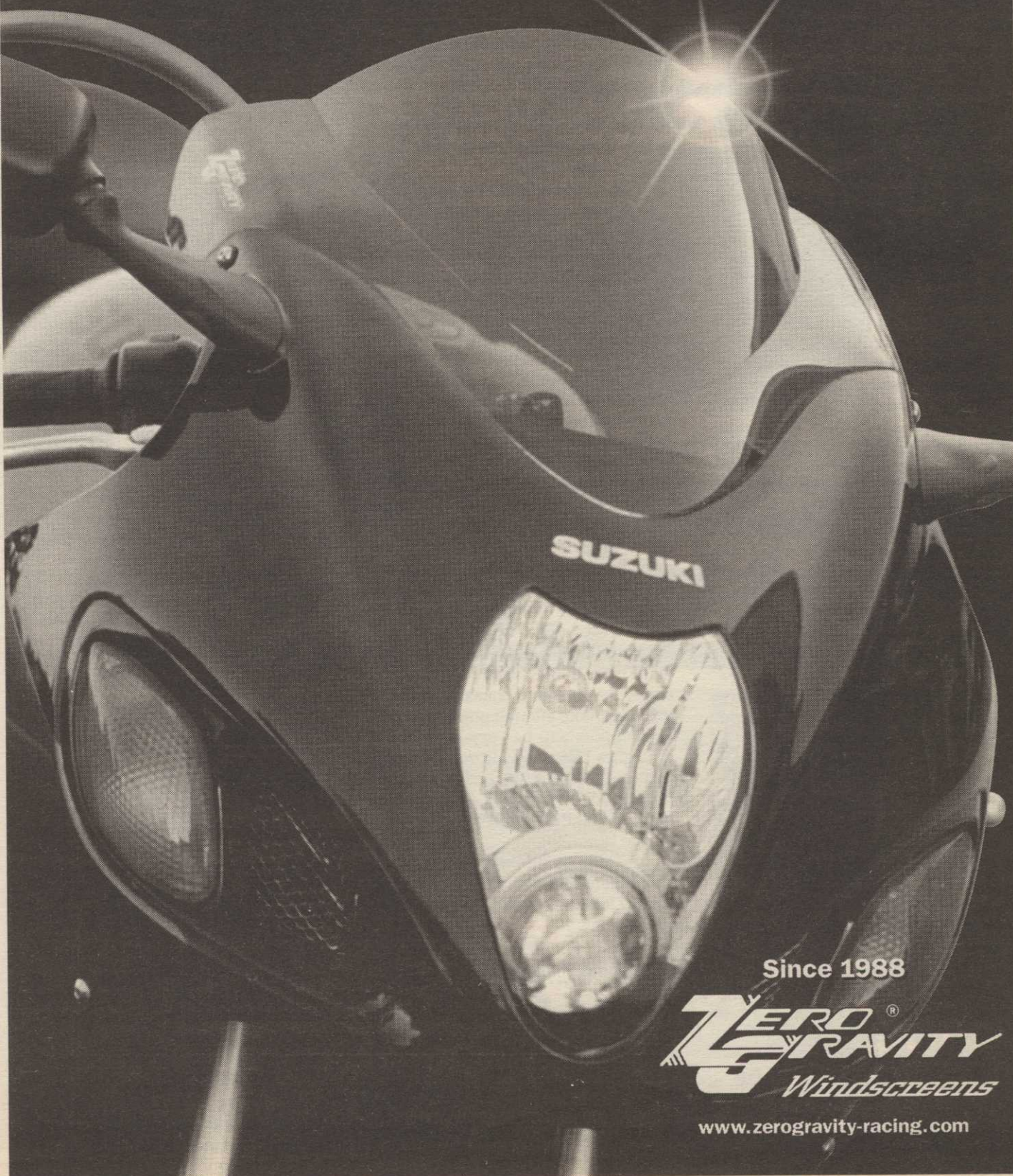
Sorbo came in early on the Honda and said, "It's got too much damping so the suspension wasn't moving. It was like a car with tires that are over-inflated a whole lot. Everything was really solid feeling. I could feel that the bike could go faster but I was scared to ride it faster because I wasn't getting any feedback. It was like I was separated from the road from how much damping there was. The thing carburetors perfect. It doesn't carburetor good. It doesn't carburetor really well. It carburetors perfect. It does exactly what it's supposed to do all of the time. The brakes are super solid. I really love that instant grab feel that you get."

continued on page 28

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Honda Announces V-5 Four-stroke For Grand Prix

Honda officials have announced the configuration of their powerplant for the new 1000cc four-stroke GP series in 2002. During a year-ending event at Honda headquarters in Tokyo, President Hiroyuki Yoshino revealed that HRC engineers are building a V-5 engine. The new technical regulations—introduced to return four-strokes to GPs and thus bring the premier bike series into line with road bike sales—come into effect a year from now and will see 1000cc four-strokes racing alongside the 500cc two-strokes that have dominated Grand Prix racing for so long.

The Honda men wouldn't reveal any further details about their latest Grand Prix racer, though they had earlier explained that four cylinders are too few and six too many under the new tech regulations, which allow a maximum of six cylinders and use different weight limits to handicap bikes according to the number of cylinders. Honda engineers believe a five-cylinder engine to be the best configuration to produce an ideal power-to-weight compromise.

Experts suggest that these new four-stroke engines will produce in excess of 200 bhp, around 10 bhp more than the current two-stroke V-4s. The Honda V-5 engine and a V-3 built as a comparison engineering exercise are already running in tests.

According to sources close to HRC (Honda Racing Corporation), the Honda V-5 has three forward cylinders and two rearward cylinders. The sources also said that Honda engineers do not think that engine costs will spiral out of control with the switch from two-strokes to four-strokes because it will be easy to produce too much power for existing tire and chassis technology. Compared to Formula One car engines, the Honda sources say, the four-stroke motorcycle engines will be relatively tame and will not require as much maintenance. Minimum weight regulations will control the use of exotic materials and the main design emphasis will be on building a better chassis to maximize the horsepower that can be used by the rider. Others in the paddock are not so sure that costs will not escalate beyond all reasonable levels, although the term "reasonable" is subjective. A two-stroke Yamaha YZR500, for example, uses four pistons each worth \$500 with a service life of 300 kilometers.

Mamoru Moriwaki Plans Grand Prix Four-stroke

Noted Japanese tuner Mamoru Moriwaki plans to build a four-stroke

racebike to compete in the Grand Prix World Championship in 2002. Moriwaki, who made his name building innovative complete chassis powered by both Superbike and 500cc GP engines starting in the late 1970s, has not decided which brand of engine to use in his racebike, according to his daughter, Midori, who handles export markets and manages the race team for Moriwaki Engineering.

Moriwaki Engineering's primary business is manufacturing aftermarket exhaust systems and camshafts. Mamoru Moriwaki's son, Shogo, raced a Honda RS125 last year and will compete in the 600cc Superstock class of the All Japan Championship series on a Honda CBR600F4. Moriwaki was a key figure in the development of 500cc World Champion Wayne Gardner's early career, which saw Gardner racing Moriwaki Kawasaki Superbikes in Europe and in Japan.

Kanemoto Back, With Bridgestone Test Team

Legendary GP engineer Erv Kanemoto is returning to racing this year, running a test team for tire giant Bridgestone. The Japanese-American missed the 2000 Grand Prix season, his first year out of GPs since the early 1980s, because he couldn't raise enough money for a 500cc team. He will now look after Bridgestone's test program, using Japanese riders Shinichi Itoh and Nobuatsu Aoki. They will test throughout Europe, using latest-spec Honda NSR500s to help them develop tires to conquer GP racing's biggest class.

"We'll start off gathering data to get the tires up to a level," said Kanemoto. "It's going to be an interesting project. It's a little more difficult than people think to build tires for such powerful bikes. I'm looking forward to it because I think it'll help me understand tires a little more, and I think tires are one area where we can find a pretty good jump in performance. And it'll be good working with Shinichi and Nobu. I asked for two riders because it's not a good idea to focus your testing around one guy."

Obviously, Bridgestone's intention is to start work on 500s and then move on to building rubber for the new four-stroke GP series. Kanemoto believes the new world of four-stroke GP racing will be all about power delivery, not peak horsepower.

"At first I thought Honda would just run over everyone," Kanemoto said. "Then it hit me—with 990cc you can make more than enough power to overpower the tires and chassis, so everyone can make enough power. I expect some bikes will be very fast on the straights but not around the whole racetrack. I think the people who win will be those who make a nice powerband that will be easier and smoother on the tires."

Kanemoto has won seven World Championships with Freddie Spencer, Eddie Lawson, Luca Cadalora and Max Biaggi.

Weather Hampers Sepang Tests

Difficult weather conditions dominated Honda's and Suzuki's first 500cc Grand Prix tests of 2001, at Sepang in mid-January. Tropical rain storms soaked the Malaysian circuit over several days, preventing any of the riders from getting even close to Max Biaggi's record-busting lap set dur-



Olivier Jacque, the 2000 250cc World Champion, will campaign a Gauloises-sponsored Yamaha YZR500 in the 2001 500cc World Championship. Photo by Yves Jarnotte/Sports Photography.

ing Marlboro Yamaha tests held just before Christmas.

Fastest man was 2000-title-runner-up Valentino Rossi, who clocked a 2:06.4, over a second outside Biaggi's best. Rossi on his Nastro Azzurro Honda was just two tenths quicker than World Champion Kenny Roberts on his Movistar Suzuki, who was a tenth faster than class rookie Tohru Ukawa on a Repsol Honda. Roberts' new Movistar Suzuki teammate Sete Gibernau was a further two tenths adrift at 2:06.9.

Rossi, whom many believe is a favorite for the 2001 title, livened up proceedings by trying to tempt Roberts into a race, but the American wasn't up for it.

"I was really enjoying myself," said former 125cc and 250cc World Champion Rossi. "I rode a fast lap with Kenny slipstreaming me and then decided I'd let him past so I could do the same. He didn't want to play so it looks like we'll have to wait 'til the first race at Suzuka to find out where we both are."

Both men concentrated on testing the latest range of Michelin tires, Rossi also making useful progress on engine work. According to team engineer Jerry Burgess, the 2001 engine offers more friendly power delivery than last year's fiery version.

Roberts, meanwhile, rode updated 2000 RGV500s, since Suzuki's new engine wasn't ready for the session, though he did test various 2001 parts. The team cancelled their next tests in Australia, preferring to wait until the new engine is ready.

"Our major focus is on engine power and power delivery," explained Suzuki's Technical Chief, Warren Willing. "That's where we need the biggest improvement to help Kenny defend his Championship successfully, and give Sete the chance to show his talents at their best."

"Chassis wise, there are several upgrades, to refine manufacturing techniques and service. Overall it is similar to the previous version, using the stiffness ratios and basic geometry we established in 2000."

Ukawa continued progressing towards his first 500cc Grand Prix season while teammate Alex Crivillé stayed home, still recovering from the hand injury he sustained at Jerez at the end of last year.

Shell Advance Honda 500cc rookie Chris Walker had also hoped to be at the tests but Suzuki officials, who had booked the track, made Honda's participation conditional on Walker not

being present. Walker recently reneged on a World Superbike letter of intent with Suzuki to instead sign with the Shell Advance team.

Waldmann Heads For Cars Instead Of World Superbikes?

Ralf Waldmann has run out of Grand Prix options and may switch to car racing this year. He had been offered a World Superbike ride with Aprilia, for whom he's ridden 250s in recent years, but the German star wanted to stick with GPs. The most successful Grand Prix rider never to have won a World Championship, Waldi won 20 GPs but never quite wore a crown.

World Championship Riders

Final rider lists for this year's Grand Prix World Championship were unveiled mid-January, with the biggest 500cc grid seen in years. There will be 26 full-time riders in the premier class, which is led by new World Champion Kenny Roberts.

There are few other surprises in the 500cc line-up. Roberts' new Movistar Suzuki teammate Sete Gibernau was announced before the end of last season, as was former World Champion Alex Crivillé's new Repsol Honda partner Tohru Ukawa. And the Marlboro Yamaha Team remains unchanged with Max Biaggi and Carlos Checa lining up together for the third year running.

Yamaha, of course, has one extra 500cc team this year—Herve Poncharal's Tech 3 squad, which has graduated to the big class after dominating the 2000 250cc season. But Olivier Jacque and Shinya Nakano won't be silver arrows this year. Their eye-catching silver Chesterfield livery has been replaced by the blue colors of rival tobacco brand Gauloises.

Further down the order there're two new names in racing—the Pulse and the Sabre. New names, not new motors. The Pulse is the old MuZ V-4, which was the old Elf, which was the old SwissAuto. This year the bikes will be run by a new team set up by Dave Stewart, who managed the BSL team in 1999. The team will run new chassis, built by Fabrication Techniques, the company that makes the KR3 chassis and also created a chassis for the never-raced KR4. Riders are Briton Jay Vincent, making his first full-time foray into 500s, and Aussie Mark Willis.

The Sabre is an updated privateer

Yamaha YZR motor in an ROC chassis, adapted by British team Sabre. Former 250cc rider Johan Stigefelt moves up a class to ride the bike.

There are no defending Champions in either the 250cc or 125cc classes, Jacque having gone to 500s and 125cc World Champion Roberto Locatelli graduating to 250s, riding a factory Aprilia RSW250 backed by gambling website Eurobet.

500cc World Championship

No.	Rider, country, machine	Team
1	Kenny Roberts, U.S., Suzuki	Telefonica Movistar Suzuki
3	Max Biaggi, Italy, Yamaha	Marlboro Yamaha Team
4	Alex Barros, Brazil, Honda	Honda Pons
5	Garry McCoy, Australia	Red Bull Yamaha WCM
6	Norick Abe, Japan, Yamaha	Antena Tre Yamaha D'Antin
7	Carlos Checa, Spain, Yamaha	Marlboro Yamaha Team
8	Chris Walker, GB, Honda	Shell Advance Racing
9	Leon Haslam, GB, Honda	Shell Advance Racing
11	Tohru Ukawa, Japan, Honda	Repsol YPF Honda Team
12	Haruchika Aoki, Japan, Honda	Arie Molenaar Racing
14	Marcus Payten, Aus., Honda	Dee Cee Jeans Racing
15	Sele Gibernau, Spain, Suzuki	Telefonica Movistar Suzuki
16	Johan Stigefelt, Swed., Sabre	Sabre Sport
17	Jurgen vd. Goorbergh, Hol, Proton	Proton Team KR
18	David Tomas, Spain, Honda	Quereseno Racing
19	Olivier Jacque, France, Yamaha	Gauloises Yamaha Tech 3
20	TBA, TBA, Proton	Proton Team KR
21	Barry Veneman, Hol., Honda	Dee Cee Jeans Racing
24	Jay Vincent, Great Britain, Pulse	Pulse Racing
25	Jose Luis Cardoso, Spain, Yamaha	Antena Tre Yamaha D'Antin
28	Alex Criville, Spain, Honda	Repsol YPF Honda Team
41	Noriyuki Haga, Japan, Yamaha	Red Bull Yamaha WCM
46	Valentino Rossi, Italy, Honda	Nastro Azzurro Honda
56	Shinya Nakano, Japan, Yamaha	Gauloises Yamaha Tech 3
65	Loris Capirossi, Italy, Honda	Honda Pons
68	Mark Willis, Australia, Pulse	Pulse Racing

250cc World Championship

No.	Rider, country, machine	Team
5	Marco Melandri, Italy, Aprilia	MS Aprilia Racing
6	Alex Debon, Spain, Aprilia	CC Valencia Airtel
7	Emilio Alzamora, Spain, Honda	Aspar
8	Naoki Matsudo, Japan, Yamaha	Axo Honda Gresini
9	Sebastian Porto, Argentina, Honda	TVK Motorsports
10	Alfonso Nieto, Spain, Aprilia	Repsol YPF Honda
11	Riccardo Chiarello, Italy, Aprilia	CC Valencia Airtel
12	Randy de Puniet, France, Aprilia	Aspar
14	Anthony West, Australia, TBA	Aprilia Grand Prix
15	Roberto Locatelli, Italy, Aprilia	Scrab Competition
16	Ivan Silva, Spain, Honda	TBA
17	Sylvain Guintoli, France, Aprilia	Eurobet Team Battaini
18	Sharol Yuzy, Malaysia, Yamaha	Repsol YPF Honda
19	Lucas Oliver, Spain, Yamaha	Scrab Competition
20	Jeronimo Vidal, Spain, Aprilia	TVK Motorsports
21	Franco Battaini, Italy, Aprilia	Antena Tre Yamaha
22	David de Gea, Spain, Yamaha	D'Antin
23	Cesar Barros, Brazil, Yamaha	PR2
26	Klaus Nohles, Germany, Aprilia	Eurobet Team Battaini
27	Lorenzo Lanzi, Italy, Aprilia	Antena Tre Yamaha
31	Tetsuya Harada, Japan, Aprilia	D'Antin
37	Luca Boscuro, Italy, Aprilia	Yamaha Kurz Aral
42	David Checa, Spain, Honda	Aprilia Germany
44	Roberto Rolfo, Italy, Aprilia	Camptella Racing
55	Diego Giugovaz, Italy, Yamaha	MS Aprilia Racing
66	Alex Hofmann, Germany, Aprilia	Camptella Racing
74	Daijiro Kato, Japan, Honda	CE BA Corse
98	Katja Poensgen, Germany, Aprilia	Vasco Rossi Racing
99	Jeremy McWilliams, Great Britain, Aprilia	Edo Racing
		Racing Factory
		Axo Honda Gresini
		Umoto
		Umoto

125cc World Championship

No.	Rider, country, machine	Team
2	Yuchi Ui, Japan, Derbi	Derbi Racing
4	Masao Azuma, Japan, Honda	Liegeois Competition
5	Noboru Ueda, Japan, Honda	Technical Sports
6	Mirko Giansanti, Italy, Aprilia	Semprucci-Biesse
7	Stefano Perugini, Italy, Italjet	Italjet Racing
8	Gianluigi Scalvini, Italy, Italjet	Italjet Racing
9	Lucio Cecchinello, Italy, Aprilia	MS LCR
10	Jarno Muller, Germany, Honda	ADAC Sachsen
11	Max Sabbatini, Italy, Aprilia	Bossini Fontana
12	Raul Jara, Spain, Aprilia	MS LCR
14	Philip Hafaneger, Germany, Honda	Liegeois Competition
15	Alex De Angelis, San Marino, Honda	Matteoni Racing
16	Simone Sanna, Italy, Aprilia	Vasco Rossi Racing
17	Steve Jenkner, Germany, Aprilia	LAE UGT 3000
18	Jakub Smrz, Czech Rep., Honda	Budweiser Budvar
19	Alessandro Brannetti, Italy, Aprilia	Hanusch
20	Gaspare Caffiero, Italy, Aprilia	Du Martel SA
21	Arnaud Vincent, France, Honda	Bossini Fontana
22	Pablo Nieto, Spain, Derbi	CE BA Corse
23	Gino Borsari, Italy, Aprilia	Derbi Caja Madrid
24	Toni Elias, Spain, Honda	LAE UGT 3000
25	Joan Olive, Spain, Honda	Telefonica Movistar
26	Daniel Pedrosa, Spain, Honda	Junior Team
27	Marco Petrini, Italy, Honda	Telefonica Movistar
28	Gabor Tamas, Hungary, Honda	Junior Team
29	Angel Nieto Jr., Spain, Honda	Racing Service
30	Adrian Araujo, Spain, Aprilia	Racing Service
34	Eric Bataille, Andorra, Honda	Telefonica Movistar
39	Jaroslav Hules, Czech Rep., Honda	Team
54	Manuel Poggiali, San Marino, Derbi	Semprucci-Biesse
		Quereseno Racing
		Matteoni Racing
		Derbi Caja Madrid

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Why They Shake, Why They Don't,

By James and Robert Jantz
Part VIII

Last time we focused entirely on V-Twins and explained how the V-angle and number of crankpins (one or two) affected vibration. The Ducati Supermono was also analyzed since its dynamic characteristics are the same as those of a 90° Ducati Twin. Finally, we derived a relationship presented by Honda in its advertisements of 1983. Given a V-angle, Honda's equation provided the second phase angle needed for primary-force balance in V-Twins using two crankpins.

In this article, we'll develop the general shaking-force and moment equations applicable to any V-engine. Then, three different V-4 engines will be analyzed: A 90° V with a 180° crank, a 90° V using a 360° crank and a Flat Four. All of these engines have been built by Honda at one time or another. In addition, we'll show how to determine the firing orders possible with any V-engine given the V and phase angles. This task is more involved with Vs than it is with Inline configurations.

Shaking Forces

In Article V, we developed the following general expression for the shaking forces generated in any cylinder of an Inline engine:

$$F_{SX_i} = m_B r \omega^2 [\cos(\theta - \phi_i) + r \cos 2(\theta - \phi_i)]$$

(Equation 5.3)

Recall that this equation is for steady-state (constant speed) conditions and that it assumes a balanced crankshaft. The variables in 5.3 are defined as follows: m_B = mass concentrated at wristpin B, l = length of conrod, r = length of crankpin ($1/2$ the stroke) and ω (Greek letter omega) = speed of crankshaft in radians/sec. The quantity $(\theta - \phi_i)$ is the crank angle for cylinder i or the cylinder of interest. In general, the crank angle defines the instantaneous angle between the axis of a cylinder and its crankpin. θ (Greek letter theta) defines the crank angle for the number one cylinder. As shown in Figure 5-3, θ is measured in the direction of engine rotation (counterclockwise in our model).

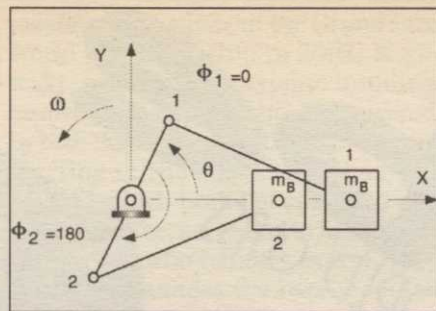


Figure 5-3

Figure 5-3 was first presented in Article V, and we've included it here to help with the review of crank and phase angles. This Figure shows a 180° Parallel Twin when piston one is beyond TDC. Phase angles given by ϕ (Greek letter phi) provide the angular locations of the crankpins on a crankshaft. Phase angles are measured with respect to the number one crankpin and in the direction opposite to crankshaft rotation. Since the number one pin serves as the reference for all other crankpins, the phase angle for the first cylinder is always zero. Thus, the phase angles for the 180° Twin shown in Figure 5-3 are $\phi_1 = 0^\circ$ and $\phi_2 = 180^\circ$.

Note from Equation 5.3 that the pistons, m_B , produce only X-directed forces. There are no Y-forces generated by these pistons since in our analysis the cylinders of an Inline engine all lie along the X-axis. As shown in Article VII and in Figure 8-1, we also position one bank of a V along X.

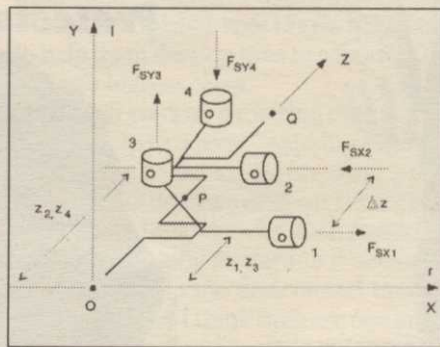


Figure 8-1

Therefore, Equation 5.3 can be used "as-is" to find the shaking forces developed in these cylinders.

A convention for "right" and "left" must also be established to provide a common reference for the cylinder banks in a V-engine. Here, right will refer to those cylinders that lie along X. The left bank of cylinders is then located γ° counterclockwise from the right bank. The Greek letter gamma, γ , is again the V-angle. In Figure 8-1 and in all subsequent Figures, an r (lowercase R) and an l (lowercase L) will be added to the cylinder axes to denote our convention. These letters will also be used to help clarify various equations. The subscripted lowercase R in Equation 5.3 indicates that this equation applies only to those cylinders in the right bank. Note that r and l will only appear on the left side of equations when used to identify cylinder banks. This will avoid confusion with the characters that represent stroke and conrod lengths.

In Article VII, we developed the following equations for the primary inertial forces generated by the second piston in a V-Twin:

$$F_{B2X} = -m_B r \omega^2 \cos(\theta - \phi_2) \cos(\gamma)$$

(Equation 7.8a)

$$F_{B2Y} = -m_B r \omega^2 \cos(\theta - \phi_2) \sin(\gamma)$$

(Equation 7.8b)

These equations were derived specifically for piston two of a Twin. Since this piston (Refer to Figures 7-4 and 7-5 in Part VII.) lies in the left bank, Equations 7.8a and b can also be applied to any left-side cylinder by using the phase angle for that cylinder. The shaking forces (These are equal and opposite to the inertial forces.) from a cylinder in the left bank can thus be found from the following expressions:

$$F_{SX_i} = m_B r \omega^2 [\cos(\theta - \phi_i) + r \cos 2(\theta - \phi_i) \cos(\gamma)]$$

(Equation 8.1a)

$$F_{SY_i} = m_B r \omega^2 [\cos(\theta - \phi_i) + r \cos 2(\theta - \phi_i) \sin(\gamma)]$$

(Equation 8.1b)

Equations 8.1 only apply when the crankshaft is exactly balanced as opposed to over balanced and turns at a constant speed. Quantity $(\theta - \phi_i)$ provides the crank angles, and we've explained previously how these were determined. Note that the secondary component, $r \cos 2(\theta - \phi_i)$,

has been included and that the cosine (cos) and sine (sin) of the V-angle are used to resolve the shaking forces into X and Y-components. Notice when the V-angle is 90°, the left-hand cylinders are aligned with the Y-axis and develop no X-forces. Equation 8.1a will be zero when γ is 90° since $\cos \gamma = \cos 90^\circ = 0$.

A cylinder-numbering convention must be established before Equations 5.3, 8.1a and 8.1b can be used. Different manufacturers use different conventions. Our cylinder-numbering scheme is shown in Figure 8-1. Cylinders in the right bank are numbered first. Then, those in the left bank are numbered.

Equations 5.3, 8.1a and 8.1b can be used to determine a set of conditions which when satisfied will ensure primary and secondary force balance in a V-engine. The derivation of these conditions will not be shown, but it is similar to the one performed in Article V for the balance requirements of Inline engines. If you determine the balance conditions for a V-engine, you'll find that they are identical to those for an Inline. The total shaking force (both X and Y-components for V-engines) will be zero if the phase angles can be selected such that the following terms are zero:

$$\sum_{i=1}^n \cos \phi_i \quad \sum_{i=1}^n \sin \phi_i$$

(Equations 5.7a and 5.7b)

$$\sum_{i=1}^n \cos 2\phi_i \quad \sum_{i=1}^n \sin 2\phi_i$$

(Equations 5.8a and 5.8b)

All primary forces will cancel if the crankpins can be arranged so that 5.7a and 5.7b equal zero. Secondary forces

will cancel if Equations 5.8a and 5.8b both sum to zero. If the crankpin phase angles can be selected so that all shaking forces are eliminated, then no other forms of vibration control (e.g. overbalancing and balancer shafts) are needed.

Shaking Moments

Recall from Part VI that a moment is the product of a force and a distance. This distance is the perpendicular measurement from the force to a point or line. When Inline engines were analyzed in Part VI, all moments were defined with respect to the center point of the first main bearing, point O in Figures 6-1 and 8-1. Moments will again be referenced to point O in the analysis of V-engines.

Two moments are generated in each bank of the 90° V4 pictured in Figure 8-1. Note that this engine uses a 180° crankshaft. The moments produced in the right bank are $F_{SX1}z_1$ and $F_{SX2}z_2$. These moments act in the XZ plane, and they try to rotate the crank around the Y-axis. F_{SX1} and F_{SX2} can be found from Equation 5.3, and z_1 and z_2 are the moment arms or perpendicular distances from these shaking forces to point O. Moments $F_{SY3}z_3$ and $F_{SY4}z_4$ are generated in the left bank; these act in the YZ plane and try to rotate the crankshaft around the X-axis. Shaking forces F_{SY3} and F_{SY4} are found from Equation 8.1b, and z_3 and z_4 are the moment arms.

The cylinders in the right bank all lie along the X-axis. Thus, the moments produced in these cylinders will always act about the Y-axis. The left bank can generate moments about both X and Y depending on the V-angle, γ . If this angle is 90°, only moments about the X-axis will be produced. However, for any V-angle other than 90° and excluding 180°, the left bank generates both X and Y-moments. The total moment in any V-engine is then the vector sum of all moments about X and Y.

The total shaking moment about X is given by the following equation:

$$M_{SX} = \sum_{i=\frac{n}{2}+1}^n F_{SY_i} z_i$$

(Equation 8.2a)

Since only the left-side cylinders can generate moments about X, the summation begins at the first cylinder in the left bank, $i = n/2 + 1$, and includes all cylinders on the left-side of the engine. Recall that n is equal to the number of cylinders. Thus, for the engine shown in Figure 8-1, Equation 8.2a would apply to cylinders 3 ($i = 4/2 + 1 = 3$) and 4 ($i = n$).

The total shaking moment about Y can be found from:

$$M_{SY} = \sum_{i=1}^n F_{SX_i} z_i$$

(Equation 8.2b)

Since any cylinder in a V-engine can generate Y-moments, the summation includes all of the cylinders ($i = 1, 2, 3 \dots n$). However, when the V-angle, γ , is 90°, the cylinders in the left bank generate no moments about Y because F_{SX} is zero for these cylinders.

A set of conditions similar to those given by Equations 5.7 and 5.8 can be found from Equations 8.2 which when satisfied will ensure the cancellation of all shaking moments in V-engines. The derivation of these conditions will not be shown, but it is given in Professor Norton's book, *Design of Machinery*. If you consult this book or if you perform the derivation yourself, you'll find that the conditions for zero shaking moment in V-engines are identical to those for Inlines. These conditions were given in Article VI and are repeated here:

$$\sum_{i=1}^n Z_i \cos \phi_i \quad \sum_{i=1}^n Z_i \sin \phi_i$$

(Equations 6.2a and 6.2b)

$$\sum_{i=1}^n Z_i \cos 2\phi_i \quad \sum_{i=1}^n Z_i \sin 2\phi_i$$

(Equations 6.3a and 6.3b)

All primary moments will cancel if the crankpins can be arranged so that 6.2a and 6.2b equal zero. Secondary moments will cancel if Equations 6.3a and 6.3b both sum to zero. For complete primary and secondary force and moment balance, Equations 5.7, 5.8, 6.2 and 6.3 must all sum to zero. If all these equations can be made to equal zero through crankpin phasing only, then no additional forms of vibration control (e.g. overbalancing and balancer shafts) are needed.

V-Fours

Four-cylinder V-engines are generally built in three configurations, and throughout its history, Honda has produced each of these. The current VFR 800 Interceptor uses a 90° V and a 180° crankshaft (See Figure 8-1.). However, the first 750 Interceptor used a 90° V and a 360° crank. This configuration is shown in Figure 8-2. The Gold Wing, introduced in 1975, was Honda's first V-4. This engine used a 180° V-angle and a 180° crankshaft. A sketch of the Gold Wing's crank is presented in Figure 8-3, and take note of which throws are used for the right and left cylinders.

The 90° V-Fours will be analyzed first, and then the 180° V or Opposed Four will be discussed. We'll concentrate on selecting phase angles and V-angles to reduce vibration. When choosing phase angles, Equations 5.7, 5.8, 6.2 and 6.3 and Figure 5-4 from Article V will all be used.

90° V-Four (180° Crankshaft)

The crankshaft shown in Figure 8-1 has phase angles of $\phi_1=0^\circ$, $\phi_2=180^\circ$, $\phi_3=0^\circ$, and $\phi_4=180^\circ$. Using Equations 5.7, the phase angle summations for the primary forces are:

$$\sum_{i=1}^4 \cos \phi_i = 1 + (-1) + 1 + (-1) = 0$$

$$\sum_{i=1}^4 \sin \phi_i = 0 + 0 + 0 + 0 = 0$$

Since both sums are zero, all primary forces are canceled by the 180° crankshaft. In fact, with this crank, any V-angle could be used, and all primary forces would still cancel.

The secondary force summations (not shown) are non-zero. When these sums do not add to zero, the engine must be further analyzed to see if the V-angle has been chosen such that secondary forces cancel. We performed this analysis using Equations 8.1 and others and found that secondary forces do not cancel when a 180° crank and 90° V are used.

Next, phase angle summations for all moments will be calculated. As in previous articles, moment arms (z-values) will be determined with respect to the center of the first main bearing (point O in Figure 8-1). When determining moment arms, it will again be assumed that the distance from the first main bearing to the centerline of cylinder one is one unit and that all cylinders are separated from each other by one unit. Also, the same z-value will be used for cylinders whose connecting rods share a crankpin. Thus, the moment arms for the engine shown in Figure 8-1 are $z_1=z_3=1$ and $z_2=z_4=2$. The phase angle summations for the primary moments are then:

$$\sum_{i=1}^4 z_i \cos \phi_i = 1(1) + 2(-1) + 1(1) + 2(-1) = -2$$

$$\sum_{i=1}^4 z_i \sin \phi_i = 1(0) + 2(0) + 1(0) + 2(0) = 0$$

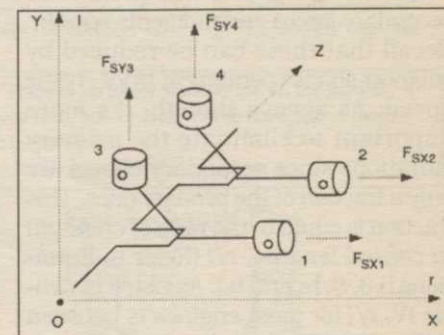
Since the primary (shown) and sec-

ondary (not shown) sums are both non-zero, these phase angles alone will not cancel shaking moments. Therefore, a more detailed analysis is required to determine whether the V-angle has been chosen such that moments cancel. We completed this analysis using Equations 5.3, 8.1a, 8.1b, 8.2a and 8.2b and found that a 90° V4 with a 180° crank generates primary and secondary moments. This analysis assumed a balanced (i.e. non-overbalanced) crankshaft.

90° V-Four (360° Crankshaft)

A sketch of a 90° V4 using a 360° crankshaft is shown in Figure 8-2.

Figure 8-2



This engine has phase angles of $\phi_1=\phi_2=\phi_3=\phi_4=0^\circ$. Note that it's just as accurate to state that all of the phase angles are equal to 360°. The phase angle summations for the forces and moments are not given, but they are

continued on page 24

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all non-zero. Again, crankshaft geometry alone will not cancel primary or secondary shaking effects. Thus, you'd think this engine would be a real shaker, and it would be without an overbalanced crank.

The V-4 sketched in Figure 8-2 is the equivalent of two single-crankpin, 90° V-Twins placed side-by-side. In Article VII, we showed how 100 percent overbalancing is used in these engines to achieve primary balance. The V-4 will also produce primary balance if both pins on the 360° crank are overbalanced by 100 percent. However, even with an overbalanced crankshaft, secondary forces and moments remain. Recall that these can be reduced by balancer shafts operating at twice engine speed. As always though, it's more important to eliminate the primary vibrations since secondary effects are only a fraction of the primary ones. This fraction is equal to the ratio of crankpin to conrod lengths, r/l (Refer to Equations 5.3, 8.1a and b.). As noted in Article IV, r/l for most engines is between 1/5 and 1/3.

Regardless of V-angle, a two-pin, 180° crankshaft always produces primary force balance in a V-4. This is accomplished without overbalancing. However, with a two-pin, 360° crank, the V-angle must be 90° and the crankshaft must be overbalanced to achieve primary balance. This is also the case with single-pin, 90° V-Twins.

If you were designing a 90° V-4, which crankshaft would you choose? A 180° crank cancels primary forces without overbalancing. This crank would then be lighter than an overbalanced 360° design. A lighter crank will result in quicker revs and less engine weight. However, the 180° crankshaft does generate primary moments. We'll explain in Article IX how these are reduced by adding mass at the ends of the crank. If mass is added, the weight advantage of a 180° design is diminished.

A 360° crankshaft cancels all primary shaking, and it has a more regular firing order than its 180° counterpart. However, as explained later, neither crank produces even-firing, but the more regular the power pulses, the smoother the engine. Sound and power delivery are also important, and both are affected by firing order. To many, neither V-4 is pleasant sounding. (Note, in our opinion, Larry Cochran should not be allowed to race his Vintage Interceptor with open pipes at WSMC events). In addition, the 360° engine is generally thought to have a more droning exhaust note. Finally, the impact of firing order on traction is well documented. The firing orders and tractive qualities of the two V-4s will be examined after the discussion of Opposed Fours.

Opposed Four

The crankshaft used in the original Gold Wing is shown in Figure 8-3.

Note that we use a different cylinder numbering scheme than Honda, and that we reverse the designation of right and left for the cylinder banks. The crankshaft illustrated in Figure 8-3 uses the same geometry ($\phi_1=0^\circ$, $\phi_2=180^\circ$, $\phi_3=180^\circ$ and $\phi_4=0^\circ$) as a 4-stroke, Inline 4. In Article VI, we showed that this arrangement of crankpins

cancels all primary shaking. The elimination of shaking forces and moments is evident from the primary phase-angle summations; they are all equal to zero. Thus, the 0-180-180-0° geometry produces primary balance regardless of V-angle. The secondary phase-angle sums are non-zero for both forces and moments. Therefore, a more detailed analysis is required to determine if the choice of V-angle, 180°, has eliminated secondary effects. Once performed, this analysis shows that secondary forces cancel, but secondary moments remain.

Overall, the Flat 4 is a smooth running engine, and we'll show in the next section that it also has an even firing order. In addition, it's interesting to note which pistons are in each bank of the Flat 4. If you inspect Figure 8-3, you'll find that the arrangement shown is the only reasonable one. It results in the shortest crankshaft and the smallest offset between cylinder banks.

Firing Order

We showed in Article VI how to use a crank-phase diagram to calculate the possible firing orders in an Inline engine. However, this approach will not work for V-engines since there are two banks of cylinders to consider, so we'll use a different method. In addition, firing sequences will be given in terms of cylinder numbers (e.g. 1-3-4-2) and power-stroke angles (e.g. 0-180-360-540°). These define the points in the stroke cycle where each cylinder fires. Recall that the stroke cycle is the number of degrees of crank rotation needed to fire all cylinders. A two-stroke engine has power-stroke angles between 0 and 360°, and a four-stroke, between 0 and 720°. Power-stroke angles can be used to directly compare engines using different cylinder numbering schemes. A comparison based on cylinder numbers is only possible if engines use the same numbering scheme or if the sequence from one engine is translated into that used by the others.

The firing orders possible with any V-engine can be found from the phase and V-angles. Cylinders in the right bank can fire at crank or power-stroke angles of $\theta=\phi$ and $\theta=\phi+360^\circ$, provided the term $(\phi+360^\circ)$ does not exceed the stroke cycle. Cylinders in the left bank can fire at $\theta=\phi+\gamma$ and $\theta=\phi+\gamma+360^\circ$. Again, the latter term cannot be greater than the stroke cycle. The equations for the left bank only apply if an engine rotates counterclockwise. If it spins clockwise, the power-stroke angles for the left side are given by $\theta=\phi-\gamma$ and $\theta=\phi-\gamma+360^\circ$. Unless stated otherwise, all engines are assumed to rotate counterclockwise. Finally, the power-stroke angles for both banks define when a piston will be near TDC and positioned for a possible power stroke.

The engine pictured in Figure 8-1 will be used to illustrate how firing orders are determined. This engine has a V-angle (γ) of 90° and phase angles

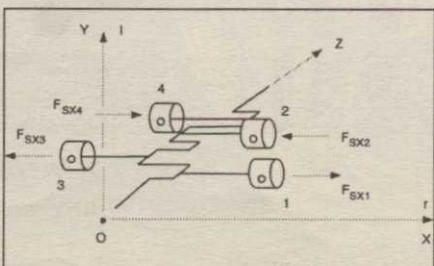


Figure 8-3

of $\phi_1=0^\circ$, $\phi_2=180^\circ$, $\phi_3=0^\circ$ and $\phi_4=180^\circ$. Since cylinders 1 and 2 are in the right bank and 3 and 4 are in the left, the following table of possible power-stroke angles can be constructed for a 4-cycle engine.

Cylinder #	Cylinder Bank	Possible Power-Stroke Angles (θ°)
1	Right	0 360
2	Right	180 540
3	Left	90 450
4	Left	270 630

Table 8-1

Firing orders can then be determined from this table provided that you adhere to the following conventions. The number 1 cylinder always fires first, so its power-stroke angle is fixed at 0°. Values must be chosen from Table 8-1 such that the crank angle always increases. For example, you cannot select cylinder 2 to fire at 180° and then choose 3 to follow at 90°. This sequence would require that the crankshaft reverse direction. Finally, a cylinder can only be selected once for each firing order.

There are five firing orders possible from Table 8-1. In most cases, the best one is that which spaces the power pulses equally or evenly over the stroke cycle. This is known as even-firing, and it was discussed in previous



A Honda RC45 V4, circa 1999.
Photo by Kel Edge.

articles. If even-firing is not possible, and it isn't with either of the 90° V-4s that we've discussed, then the best order is usually the one which achieves some regularity in the spacing of power pulses. There is no regular sequence available when a 180° crank is used in a four-stroke. When Honda engineers used this crankshaft, they chose a firing order in terms of power-stroke angles of 0-180-450-630°. This is equivalent to a 1-2-3-4 firing order when our cylinder-numbering convention is used. Note the degrees of crankshaft rotation between power strokes. There are 180° between cylinders 1 and 2, 270° between 2 and 3, 180° from 3 to 4 and 90° from 4 to 1. The "ratty" sound of this engine is due to the irregular nature of its power pulses.

Tables similar to 8-1 can be constructed for the two other V-4s. From these tables, you'll find there are a number of firing orders possible with both engines. There is only one sequence for a four-stroke, 90° V-4 with a 360° crank that avoids firing two cylinders at a time, and this sequence has power-stroke angles of 0-90-360-450°. In terms of our cylinder numbers, this order would be either 1-3-2-4 or 1-4-2-3. There are 90° of crankshaft rotation separating the power strokes of cylinders 1 and 3, 270° between 3 and 2, 90° from 2 to 4 and 270° from 4 to 1. Note that this pattern is more regular (It repeats every 360° rather than every 720°) than that for the 90° V-4 with a 180° crank. Thus, of the two V-4s, the sound is more regular or "flat" when a 360° crank is used. Finally, the

Opposed Four is the only V-4 we analyzed that is even-firing. It can be seen from a table of power-stroke angles that a firing order of 0-180-360-540° is attainable. Replacing power-stroke angles with cylinder numbers results in two possible firing orders: 1-2-3-4 and 1-4-3-2. An even exhaust note is produced since a power pulse occurs every 180°. In fact, we thought the original 1975 Gold Wing had a very pleasant sound.

Summary

We began this article with the development of the shaking-force equations applicable to each bank of a V-engine. Equations for shaking moments were also derived for the individual cylinder banks. Using these equations, we explained how the phase and V-angles affect the development and cancellation of forces and moments. Then, three different V-4s were analyzed. Finally, we presented an approach for determining the firing orders possible with any V-engine; this approach is different from that used for Inlines.

Our next article, Part IX, will be the last in this series. In this article, we'll apply the principles and equations developed in Part VIII to V-engines of 6, 8 and 16 cylinders. We'll cover six-cylinder engines with V-angles of 60,

90 and 180° (Flat Six). The common 90° V-8 and a V-16 will also be included. Motorcycles with eight and 16 cylinders are rarely seen outside of E. J. Potter's garage or SpeedVision advertisements. However, these engines will be covered since we think they are of interest to readers, and since they demonstrate that our techniques can be applied to any V-engine, regardless of the number of cylinders.

We would like to thank Mid-Cities Honda/Kawasaki in Paramount, California for allowing us to examine their Honda shop manuals. We often visited this dealership when we lived in California, and this article could not have been completed without the information from their manuals.

As always, we'd also like to thank Robert L. Norton, Professor of Mechanical Engineering at Worcester Polytechnic Institute, Worcester, Massachusetts, for proofreading our articles. If you would like to obtain a copy of his book *Design of Machinery*, a bibliography follows: Norton, Robert L. *Design of Machinery*, Second Edition, New Media Version, McGraw-Hill, Inc., 2000. **RW**

Previous installments of the Why They Shake, Why They Don't tech series appeared in the September 1994, February 1995, March 1996, March 1997, March 1999, April 1999 and February 2001 issues of *Roadracing World*.

Haskovec Hauls at Willow

By David Swarts

Hyper Cycle's Vaclav "Vincent" Haskovec was on a roll during the first WSMC weekend of 2001, at Willow Springs. After winning a brand new Toyota Tundra V-8 pickup truck at the WSMC 2000-season awards banquet held Saturday night, Haskovec came out Sunday and won four of the five races he entered, including the Toyota Cup Formula One Unlimited Grand Prix. White Tip Racing's Ken Chase and Attack Suzuki's Jason Pridmore each won two races on a day that saw a large turnout of racers. All three riders were on Dunlop-equipped Suzuki GSX-Rs.

Haskovec, 26, came to Willow Springs not even planning on racing, yet took home thousands of dollars in purse money and a new truck. Haskovec ran no practice on Saturday, stayed out late celebrating the winning of his new truck Saturday night, only happened to come to the track Sunday by accident, didn't even enter any races until halfway through practice Sunday morning, then won four races, beating established professionals while turning lap times that would have been competitive on an AMA weekend.

The day started with the premier of a new class to Willow, the Pro-Italia Aprilia Challenge. With rules mirroring those of the National Aprilia Cup Challenge series, the new class put on one heck of a show. Libasci Racing's Oliver Chami got from the grid to turn one first and led Cruise America's Vicky Jackson-Bell, Amir Khoyi and Andre Castanos. Aprilia Challenge veteran Castanos quickly got by Khoyi, then passed both Jackson-Bell and Chami in turn eight. With times of high 1:31s, some two seconds slower than the 2000 Aprilia Cup Challenge race pace at Willow, Castanos controlled most of the sprint from the front while Jackson-Bell and Chami looked for a way by. Heading to the white flag, Jackson-Bell took the lead out of turn nine. Castanos fought back to the point on the front straight and into turn one. Castanos began to gain a small lead on the last lap, but Jackson-Bell was playing a game that she knows all too well. Jackson-Bell took back a chunk of Castanos' lead in turn eight and nine, then caught the leader's draft on the front straight. Jackson-Bell had a full head of steam and caught Castanos right at the finish line. It was a close call, but the win went to Castanos over Jackson-Bell, Chami, Khoyi, and *Roadracing World's* LaVaughn Daniel. Jackson-Bell and Daniel plan on campaigning the entire F-USA Aprilia Cup Challenge series. The Libasci Racing team of Castanos, Chami, Khoyi, and sixth-place Jeff Rockett have plans to run the whole National series as well.

The next race, Barnett Clutches 600cc Modified Production, saw Robbie Dowie get the holeshot on his 2001 GSX-R600 over WSMC Operations Manager Kenny Kopecky and Pridmore. Kopecky was shuffled backward as Synergy Racing Technologies' Mark Palazzo and Matt Wait made their way to the front. Wait led the first lap over Palazzo, Pridmore, Dowie, and Haskovec. The pace was in the low-1:24s and the action was fierce. The lead was swapped many times back-and-forth. Riding a lightly-prepped 2001 GSX-R600, Pridmore passed Wait and his 1999 Honda CBR600F4 on the front straight at the halfway point. Pridmore held on for the win. Coming from the back of the grid, Haskovec made his way to second place on lap five by passing Wait on the brakes for turn one. Wait held onto third with his new teammate Palazzo fourth and Dowie fifth.

A small field of five bikes came out to contest the *Roadracing World* 125cc Grand Prix. Wayne Killebrew got a jackrabbit start but faded to an eventual fourth. MCE Racing's Kevin Murray took the lead on the first lap over young Canadian Chris Peris and Mark Loveland. Loveland retired on the very first lap leaving the race a duel between veteran Murray and upstart Peris. Peris' Honda RS125 looked to have a top-speed advantage over Murray's Yamaha TZ125, and Peris took the lead through turn nine on lap five. Murray and Peris exchanged the lead on the front straight and through turn two until the last lap. Murray pulled out an advantage with a good run through turn two, but Peris closed ground down the back straight. Peris pulled alongside Murray through turn nine but hesitated with the throt-

tle at the exit. Murray won the drag race to the finish line. Peris took second with Mark Goodrich third and Killebrew fourth.

For the Open Superbike race, Haskovec and Chuck Graves both lined up at the back of the grid. Haskovec got through the field quickly on his Carry Andrew-built 1995 GSX-R1146 while Graves was boxed out temporarily. Haskovec was in the lead by turn five and running high 1:21s. Graves was in second by the second lap but was running a brand new Yamaha YZF-R1 on unfamiliar Dunlop tires. It was the first time in years that Graves had raced on Dunlops after racing and distributing Michelin tires for many seasons. Haskovec won by 3.9 seconds over Graves, WSMC Overall Champion Jeremy Toye, Phil Herrin and Bryan Kovarick.

John Pearson got the holeshot in 750cc Modified Production but was quickly swallowed up by an unusually talented field. Riding his new GSX-R750, WSMC regular Ken Chase took the lead on lap two. Chase was shadowed by Attack Suzuki's Richie Alexander. Riding a nearly stock Suzuki GSX-R750 that he just received on Thursday, Alexander hung with Chase's pace of low 1:24s but could not pass. Pearson found himself in a big battle for third including "Tony The Tiger" Meiring, a gaining-from-the-back-of-the-grid Chris Ulrich on a Vesrah Suzuki and Jeff Hagan on an ex-Ben Spies Valvoline EMGO Suzuki. Meiring took third from Pearson on lap five, but Ulrich moved into the last rostrum spot by passing both Pearson and Meiring on the brakes into turn one on lap six of six. Ulrich had recovered from a bad start to run third but caught an erratic lapper in turn nine. Ulrich was forced to back off. Meiring passed Ulrich, the two riders nearly bumped running to the checkers, Ulrich hit the rev limiter in fifth instead of shifting into sixth and Meiring got the position. Behind winner Chase and second place Alexander, Meiring took third with Ulrich fourth and Hagan fifth.

In the L&L Motorsports 750cc Superbike final, former motocrosser Pearson again got the holeshot only to have Chase come by to lead the first lap with Frank Aragaki third. By the third lap, 1998 AMA 750cc Supersport Champion Alexander had come from his back-of-the-grid starting spot to pass Pearson and move into third just behind Aragaki's Kawasaki. It took Alexander two laps to find a way around Aragaki. Alexander tried to catch Chase on the last two laps but came up just two bikelengths short at the line. Chase won over Alexander, Aragaki, Jeff Stern and Ed Milhausen.

Robbie Dowie got another great start in GMD Computrack-Los Angeles 600cc Supersport to lead Jacob West into turn one. Riding an Attack YZF-R6, West took the lead from Dowie going into turn eight for the first time. At the stripe it was West leading Palazzo, Graves, Dowie, Haskovec, Wait and Pridmore. Haskovec dove into turn one on the brakes like few others can at Willow Springs and went into turn two with the lead. Palazzo broke free of the pack to follow Haskovec. Palazzo made time up in the corners only to lose ground through the fast sections to Haskovec's swift Suzuki. Haskovec won with times in the mid-1:23s over Palazzo. Saying that he's now better than his old self, Wait put in another good ride with a third over Pridmore, Graves, West, and Dowie.

Chuck Graves launched from his front-row grid spot to lead the first Toyota Cup Formula One Unlimited Grand Prix of 2001 into turn one. Graves pulled out to an early lead over Chase and Alexander with Haskovec coming from the back of the grid once again. While Graves was pulling away with low-1:22 laps, Haskovec was having trouble getting around the 750cc Supersport machines of Alexander and Chase. On lap four, Haskovec made his move, displacing Alexander on the back straight and Chase out of turn nine. Haskovec set sail for Graves with eight laps to go. By lap eight of 12, Haskovec was within striking distance of Graves. Not wanting to show the former Formula USA Champion anything, Haskovec waited until the last lap to pass Graves on the brakes for turn one. Haskovec caught lappers coming into turn nine, which allowed Graves to close up, but Graves was slowed as well. Haskovec held onto the lead and the win on the same bike that won the 1996 AMA Super Teams Championship. Chase held on for third with a Dunlop DOT front and slick rear. Alexander took fourth ahead of Lee's Cycles' Toye, Stern, Pridmore on his GSX-R600, Hagan, Cruise America's Jason DiSalvo

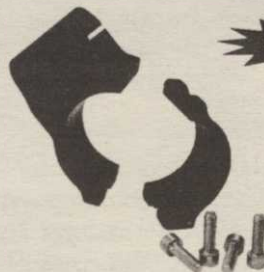
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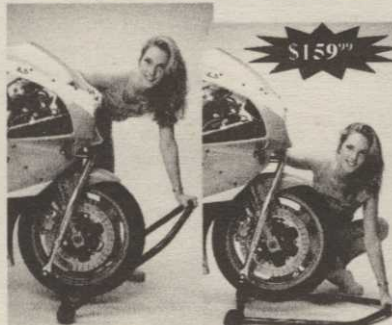
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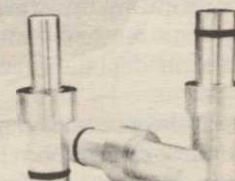
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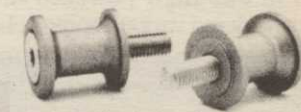


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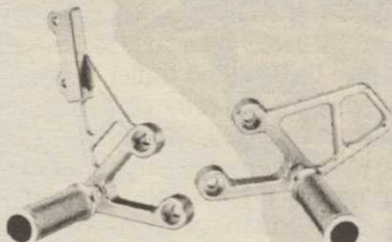
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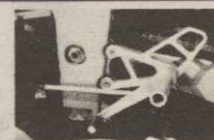
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GS500



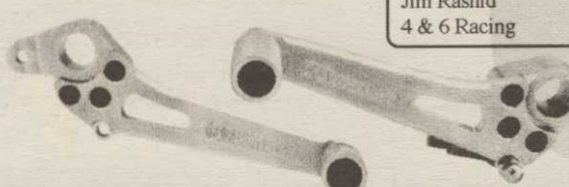
Yamaha
R1/ R6
FZR 400/600
TZ 250

Honda
F2/ F3/ F4/ F4i
900 RR, 929
RC51
Hawk650

Kawasaki
ZX6/7/9
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Army Of Darkness 2000

By Sam Fleming

Part V

A 24-hour race is primarily an exercise in logistics. It requires a massive scale-up from an ordinary endurance race, including additional riders, different bodywork, the addition of lights, rebuilding and refurbishing most systems on the bike and making the difficult decision about engines.

The engine decision comes down to the age-old trade-off between reliability and power. Most tuners favor reliability in a 24-hour motor and last year we won the race in the Mediumweight Superbike class with a stock motor. This year the only pieces in the motor that were giving us concern were the valve spring retainers. For the 24-hour we installed a new set of retainers (actually we put them in one race before) in our high-powered motor. NOTB considered various engine choices but ultimately decided to just run the motor they had been running for the whole season.

We also needed additional riders. AOD season regular Mark Junge had a bum flipper from a crash at Pocono and had been asked by Vesrah to field a team intended to win the overall race. This left Jim Williams and myself. We visited the local nursing home to pull retired AOD rider John Donnelly out of the lunch line and, ignoring his pleas that he was going to miss 'Oprah', we sent him off to California. No one had recruited seasoned rider Paul Youngman for the race and we were able to lure him to ride with us. We had also had great experiences (although his experiences with us might have been less than ideal) with Ben Spies earlier in the season and we were desperate to have one rider on the team under the age of 30. We fed him lots of lies about the romance of racing at



Required for 24-hour racing: About \$30,000 worth of equipment and one guy who knows how it all works. Photo by AOD Ministry Of Information.



Melissa trains in Vegas for the Mediumweight Superstock Championship "Plan B." Photo by AOD Ministry Of Information.

night and were delighted when he actually showed up at the track.

Since AOD is based in DC, getting all the equipment and people to California is a reasonably complex task in and of itself. Ultimately Melissa and I drove the van and trailer to California while the rest of the crew (Tim, Jim, Nolan, John, Paul) flew the 3000 miles. We were also very fortunate to have a large number of people either in, or close to, California whom we were able to lure to the track to perform pit stops and scoring tasks. Ultimately I think we had a total force of over 30 people to ride, fuel, tire and score NOTB and AOD.

Our Vegas annex had arranged for a large RV and covert California operatives had arranged for a Willow Springs garage, so Melissa, Trent and I arrived



Crewing for two teams meant, on average, changing a rear tire every 30 minutes for 24 hours straight. Photo by Brian J. Nelson.

at the track, unloaded the trailer, met up with the Spies', had dinner and then settled in for a long night of getting nervous while waiting for the rest of the troops to arrive.

At the 24-hour there is ample time for practice on Friday. It rapidly became obvious that the word of the weekend was going to be "heat". Heat in the track, heat in the pits, heat in the tires and heat in the engines. Everything was hot. We had to turn up the suspension to adjust for the hotter oil, we swapped radiators between our bikes to put the one with the least crushed

fins on the racebike and began worrying about tires. Despite Willow's well-deserved fearsome reputation for shredding tires we had experienced none of that the year before. This year the temperatures were higher and we started cooking tires in practice, an inauspicious harbinger.

We had guessed at the high desert jetting back in Maryland and had, surprisingly, guessed correctly. We did have to gear the bike taller than we had anticipated to accommodate Tim's powerful motor. That's the kind of problems that we don't mind having.



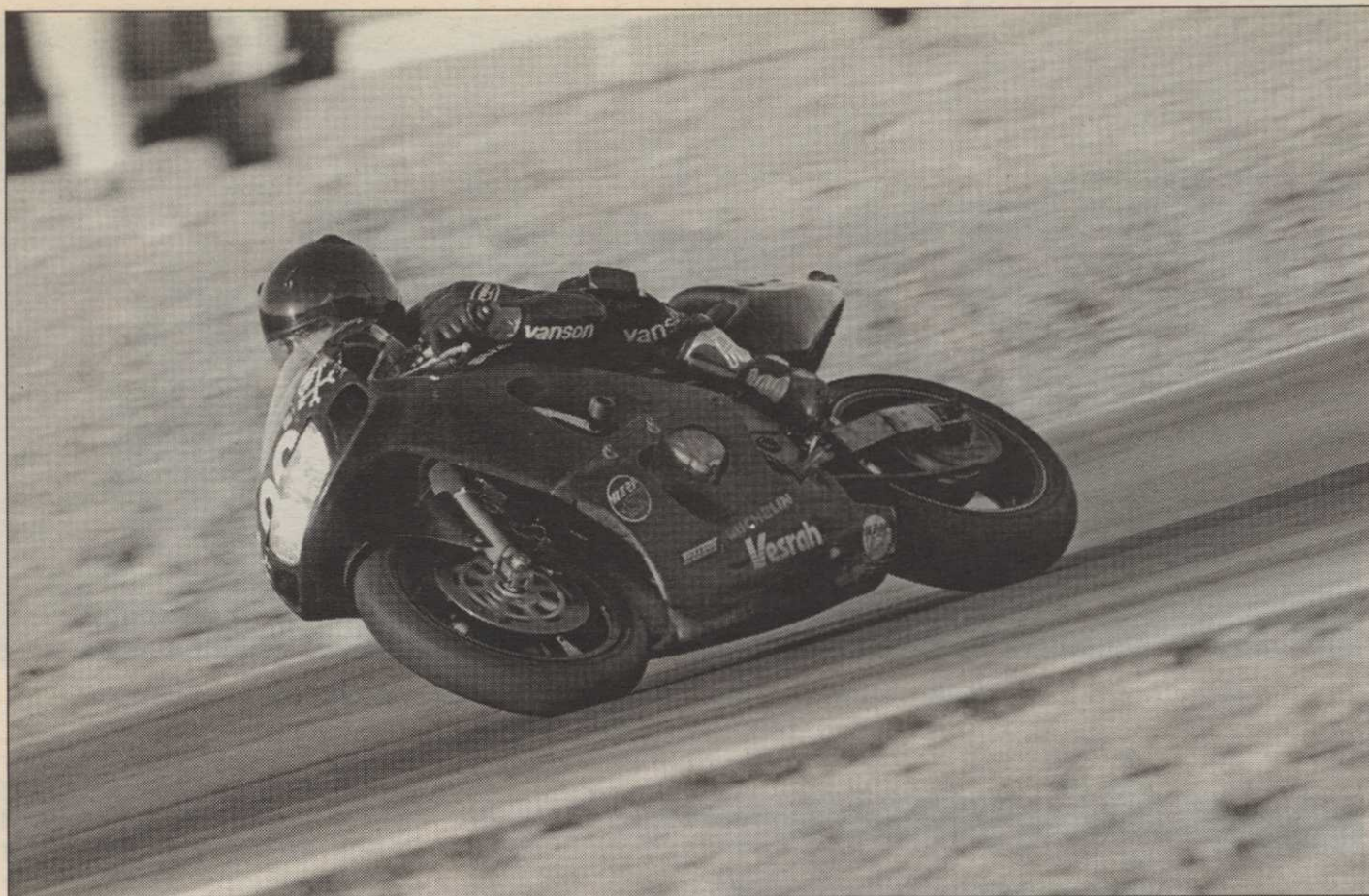
Remember when you took rider's school and they told you that you end up going wherever you look? Ben is looking up the inside. Photo by Brian J. Nelson.



At night the pits were entertained with the Annual AOD Strong Man competition. Photo by Brian J. Nelson.



Demonstrating the Army of Darkness credo "safety first", the pit crew sports stylish and reflective shirts. Photo by Brian J. Nelson.



*Sam searching for the romance and pageantry of racing after a long night.
Photo by Brian J. Nelson.*

It was all going too smooth; everyone was even riding really well. Jim, John D and I were all faster than last year and Ben Spies and Paul Youngman were inspiring. There were even

some light-hearted moments when we revealed to John Ulrich (to his dismay) that our data logging on Ben Spies (to his dismay) revealed that he turned all those impressive lap times with-

out ever holding the throttle open all the way.

Melissa knew that unless something bad happened soon we were going to have a repeat of Darryl Saylor's

terrible crash from last year. Performing the task of the bad luck proscribed burn, she fell down in turn four and comprehensively wrecked her bike.

John Ulrich volunteered an organ-donating streetbike and it was quickly and efficiently butchered for parts for Melissa's bike. Unfortunately the repairs ate up most of the available time for Melissa to find a suspension compromise for her widely varied riders and they would enter the night practice still searching for damping settings which were soft enough for her 107 pounds and stout enough for her 190-pound teammate and would suit everyone in between.

Although we had many veterans crewing or riding with us from the previous year/years, we also had a fair number of neophytes. As in the past, I tried to have an evening orientation meeting with all the crew and riders in an attempt to herd the cats into all pulling on the same rope in the same direction. The difference at this meeting was that John Ulrich was in attendance. John Ulrich, whose team has won more endurance races than any other team, whose team holds the lap record for 24-hour races, whom I write for, was in attendance.

Seeing that we were going to have a meeting after our trackside cook-out Mr. Ulrich sardonically asked me if I had prepared notes for the meeting. "Uh, yeah" came my reluctant response. "Can I see them?" he asked, somewhat

.....
continued on page 48

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"It is hard for me to believe that the Honda guys are running that well on that bike," said young Ulrich. "Compared to these other bikes, either they've got the best riders or they've got more cool parts or something. For one thing, ground clearance. I'm hanging off so much to try and not drag the pipe that I'm dragging the shit out of my toe. One thing I can say for the bike is that I could almost get the thing through eight pinned better than all of the other ones. Maybe because it's slow, I don't know. I think it had the best brakes out of all of them, the most grab. It turned okay and everything, but in the middle of the corner when you dug your foot or the peg or the pipe into the ground, it started to suck."

Sands rode the Suzuki GSX-R600 next and came back with a smile saying, "This thing is f--king good! It's a f--king good bike! It moves around a lot...way more than the Honda. The Honda's just so stable. When I'm riding the Honda, you're coming down off of four, you're hard on the gas, and you're going into five and you roll off for the transition into five. The Honda would flow really nicely in there. But I grab a downshift on the Suzuki and let the clutch out and the thing would be all over the place. But you can feel the front end. The bike has a lot of feel and it really inspires your confidence to go faster and faster. The bike moving around kept me from going faster."

"It was a wallowing pig, but I kind of got used to it," said Ulrich of the stock GSX-R600. "It's a streetbike. What can I say? I was dragging the pegs in one, three, and five pretty bad. I kept folding the pegs up. It revs pretty good. It feels like it has a really strong engine coming over the top of six. It seems to handle alright. It's good mid-corner and on turn-in. It turns in really well, actually. This thing's 10 times better than the old version, straight out of the box."

"Well, not surprisingly, I hated that bike on the street but it was the most fun in this first session on the track," said Sorbo of the GSX-R600. "It had the best balance. I said that the throttle response on the Honda was perfect. Okay, there's a thing called better-than-perfect, which is also known as the Suzuki's throttle response. This bike stays on line, and I was even able to change my line a little bit. It was really, really good on the steering. Definitely, it was the most enjoyable. I feel comfortable riding the Suzuki fast. The brakes were good in the way that I didn't even think about them. The power was broad and it definitely has a rush. It keeps pulling on top. It has the standard Suzuki transmission—totally perfect shifting. It has an overall feel that it wants to go race. The gas tank is so big it gives a feel that the bike is larger than it is, but weight is not an issue with any of these bikes. The amount of energy it requires to move the bars and make the bike lean, it's something that I don't even think about it. It's not a factor. It's not like the days of 19-inch front



The 1000s in turn five at Willow Springs, backwards for photos, Chris Ulrich on the Suzuki and Roland Sands on the Yamaha. Photo by John Ulrich.



Chris Ulrich (left) and Roland Sands discuss the 1000s between rides at Willow Springs. Photo by John Ulrich.

bothers me is the lag. There's a lot of throttle lag getting on the gas. I kind of preload it in the corner. I went flat through eight and came in like, 'That's cool.' I could probably go 1:25s on it just the way it sits...if it was my bike, you know what I mean?" Yeah, we know exactly what you mean, Roland.

Ulrich's opinion on the R6 differed from Sands'. Ulrich said, "It doesn't steer as well as the Suzuki. The Suzuki's really stable in the middle of the corner. The Yamaha is more sketchy and wants to knife under and tuck. The Yamaha turns really good but in the middle of the corner, it's not as stable. It wasn't very stable in the front end right at the apex. There were a few times early in the session when I almost pitched the thing. Like in five, I went in there and tucked the thing so hard. I thought, 'Man, I'm gonna ball this thing up before everyone rides it.' I saved it. One's stood on its nose (Yamaha)



The 600s heading up the hill out of turn three at Willow Springs, Chris Ulrich on the Suzuki leading Roland Sands on the Honda and Ed Sorbo on the Yamaha. Note that these test riders are actually carrying some corner speed and dragging their knees, unlike the riders seen in a lesser tabloid publication's recent comparison test. Photo by John Ulrich.

wheels."

"The R6 is the best bike," said Sands after his first ride on the Yamaha. "The R6 just feels the most like a racebike. It's the most solid bike. I felt like I could get on it and push it. Where on the Suzuki going that same speed, the Suzuki was moving around a lot more,

especially decelerating and on the brakes. I don't think the Yamaha's brakes are as good as the Suzuki's. It didn't turn quite as good as the Suzuki, but I think we can fix that. I just love the way the power comes on up high in the rev range. You've gotta rev the thing pretty hard. The only thing that really

and one's pretty neutral (Suzuki). Compared to the Suzuki the thing's f--king slow. It has a really nasty hesitation coming back on the throttle. The power's just not smooth coming on and off. Maybe that's the difference between carburetors and fuel injection."

Sorbo echoed the R6 carburetion

complaint voiced by all testers saying, "The biggest problem that I'm having is there's play in the throttle and lag in the carburetion. So to get a good blip, you have to wing it (the throttle) so far that you let off the brakes a little bit. So I'm pogoing the front end. On top of that, there's some sort of lean carburetion glitch. When you get back on the gas, it's ehhhh then BOOM! But when you accelerate through that zone, it runs fine through there coming out of corners. The power is great and wide, and I have multiple choices of gears in most of the corner. If I decide not to downshift going into turn five, it doesn't care. It'll still drive up the hill. On the street, we felt like it had a lot of slop in the driveline. After the slop in the throttle cable and carburetion, as far as I can tell, the transmission to the rear wheel, there's no slop there (in the driveline). It wants to not stay on line, and the bars want to feel like they're turned in, in turn two and turn nine (both being long, sweeping corners). The overall thing I like about it is that it has a comfortable 'Ed feel'. When I sit on the bike, my knees are in a place I like, my elbows, my wrists, and I'm just all comfortable on it. So I'm willing to try to ride the thing kind of hard."

After lunch, we assigned each rider a bike. Their mission was to make changes with the stock suspension to improve the bike as much as possible; once they were satisfied with their bike, the plan was for them to swap with the other riders in another rotation. Ulrich worked with tuner Jeremy Daniel on the Suzuki. Sands worked with tuner Todd Silicato on the Yamaha. And Sorbo, a qualified mechanic in his own right, wrenched on the Honda himself. All of the beginning and ending chassis settings are included in a table below.

"We stiffened up in the rear and dropped the front," Ulrich said of his changes to the GSX-R600. "Now it holds a line better through eight. It steers better and it turns. It feels better. It felt better through two. Every lap I kept going a little faster, a little faster. I think if I stayed out I could've gone faster. It's still moving around. I think that's the tire going off, but the chassis settings are definitely better. If this was Sunday and I had to race the thing, I think I could do it."

"I think I liked the Suzuki better this morning," disagreed Sands. "But that may be due to the tires are starting to get a little worn out on it. It seemed a little worse going into the corners. It seemed to move around more than it did this morning. I don't know exactly what changes they made, but it got worse with whatever changes they made to it."

Sorbo approved of Ulrich's changes saying, "From before when I rode it, it stays online and tracks better."

"We are mainly trying to get the thing to turn in a little better," said Sands of his goal for the YZF-R6 changes. "It seemed to work. It seems to turn in a little bit better now."

Ulrich liked the progress made on the R6 with the changes, saying, "It still needs more work as far as holding a line through the corner, but it turns better and the front feels better. It doesn't feel like it wants to crash any more. The power and throttle response on this thing sucks. It's horrible compared to the injected bikes. It's definitely better than it was but it needs more."

"This bike has maximum 'Ed'," said Sorbo of the R6. "It's definitely the one that I feel most comfortable on. I like the way it's small and light. From this

..... continued on page 31

Bike Settings

Bike	Adjustment	Start	Finish	(all turns/clicks are out from full-in)
CBR600F4i	Fr Comp	1.25	1.00	
	Fr Reb	1.00	1.00	
	Fr Preload	5 lines	Max/ No lines showing	
	R Comp	0.25	0.75	
	R Reb	0.25	0.50	
	R Preload	position 6	position 7/ Max	
	Fork drop	4 mm	12 mm	
YZF-R6	Fr Comp	2.00	0.75	
	Fr Reb	6	8	
	Fr Preload	5 mm	5 mm	
	R Comp	1.50	0.50	
	R Reb	12	12	
	R Preload	position 5	position 9/ Max	
	Fork drop	9 mm	17 mm	
GSX-R600	Fr Comp	0.50	0.50	
	Fr Reb	1.00	1.00	
	Fr Preload	Max/ No lines showing		
	R Comp	0.50	0.50	
	R Reb	1.00	0.75	
	R Preload	Stock	Stock/ threaded collar	
	Fork drop	8 mm	12 mm	
YZF-R1	Fr Comp	1	1	
	Fr Reb	1.75	1.75	
	Fr Preload	5 lines	Max	
	R Comp	10	10	
	R Reb	8	8	
	R Preload	position 4	Max hard	
	Fork drop	flush/ 0 mm	flush/ 0 mm	
GSX-R1000	Fr Comp	9	9	
	Fr Reb	5	5	
	Fr Preload	4 lines	4 lines	
	R Comp	5	5	
	R Reb	6	6	
	R Preload	Stock	Stock/ threaded collar	
	Fork drop	6 mm	6 mm	

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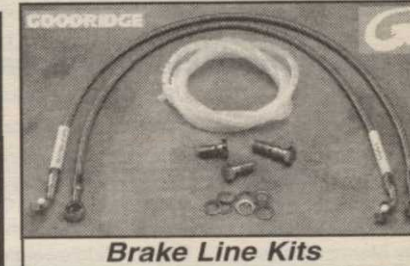
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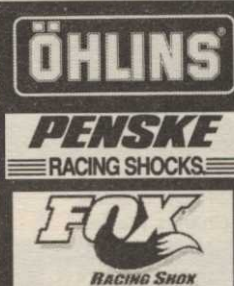
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Race Of Champions Champions

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Manny Manusuthakis Expert Heavyweight Supersport
Manny Manusuthakis Expert Middleweight Grand Prix
Manny Manusuthakis Unlimited Grand Prix
Manny Manusuthakis Expert Middleweight Supersport
Manny Manusuthakis Expert GTU
Shane Prieto Expert Unlimited Supersport
Gabriel Henning Expert GTO
Jeff McKinney Amateur SuperTwins
Jeff McKinney Amateur Formula 40
Rick Shaw Expert Formula 40
Jeff Wood Expert Lightweight Grand Prix
Jeff McKinney Middleweight Sportsman Amateur
2nd through 5th (53)

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Chad Smith Novice 750cc Production
Robert Hilliard Novice 600cc Supersport
2nd through 5th (10)

WEA Sportsman Series Champions

Jason Temme Expert D Supersport
Jason Temme Expert Formula 2
Opie Caylor Expert B Supersport
Opie Caylor Expert C Supersport
Benjamin Baker Expert B Supersport
2nd through 5th (68)

Loudon Roadracing Series Champions

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Scott Greenwood Expert MW Supersport
Scott Greenwood Expert GTU
Charles Chouinard Expert Unlimited Supersport
Charles Chouinard Expert Unlimited Supersport
Charles Chouinard Expert Unlimited Grand Prix
Des Conboy Expert HW Supersport
Jeff Wood Expert LW Grand Prix
Jeff Wood Expert MW Grand Prix
Charles Sandoz Expert LW Sportsman
Eric Gulbrandsen Expert Supertwins
Douglas Scheer Expert Production Twins
Alexander Cronin Expert GT Lights
Galen Miller Expert SuperSingles
Jerry Wood Expert GP Singles
2nd through 3rd (22)

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Geoff May Unlimited Grand Prix
Geoff May Expert Middleweight Supersport
Russ McCallister Expert SuperSingles
Russ McCallister Expert GT Lights
Chuck Juhasz Amateur GT Lights
Charles Walker Expert Heavyweight Supersport
Charles Walker Expert Supertwins
Jeff McKinney Amateur Formula 40
David Gouin Amateur Unlimited Supersport
David Gouin Amateur Middleweight Supersport
David Gouin Amateur Middleweight Supersport
David Gouin Amateur Heavyweight Supersport
David Gouin Amateur Middleweight Grand Prix
David Gouin Amateur GTO
David Gouin Amateur Heavyweight Supersport
David Gouin Amateur GTU
David Gouin Amateur Overall
2nd through 5th (41)

CCS Florida Regional Champions

Robert Fisher Expert Lightweight Supersport
Robert Fisher Expert Lightweight Supersport
Robert Fisher Expert GT Lights
Shane Prieto Expert Heavyweight Supersport
Shane Prieto Expert Middleweight Supersport
Shane Prieto Expert Middleweight Supersport
Shane Prieto Unlimited Grand Prix
Shane Prieto Expert Middleweight Grand Prix
Shane Prieto Expert GTO
Shane Prieto Expert GTU
Shane Prieto Overall
Manny Manusuthakis Expert Unlimited Supersport
Dave McIntyre Expert Heavyweight Supersport
Dwight Lewis Expert Middleweight Sportsman
John MacArthur Amateur Middleweight Supersport
John MacArthur Amateur Supersport
John MacArthur Overall
Ronny Camilo Amateur Middleweight Grand Prix
Ronny Camilo Amateur GTU
2nd through 5th (76)

Land Speed Records

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El Mirage (6)
Muroc (5)

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morning, it stays online better, it doesn't pogo anymore. It had no damping the first time I rode it. It was backed all of the way off. It totally sucked. Now it's predictable, it stays online, it's comfortable."

Because the Honda's lap times were so far behind the Suzuki and the Yamaha and those lap times were limited more by ground clearance than anything that could be adjusted on the bike, we did not ask Sands and Ulrich to ride the Honda again. Sorbo thought that he had made the bike significantly better saying, "The changes we made were to lower the front with geometry by moving the forks. Also we kept the front down by making suspension adjustments. We put less compression in the front and more compression in the rear. Then we decreased rebound in the rear and that kind of stuff. All of that is getting the bike to where it will stay on line for me when I'm on the gas. Turn two is a perfect test for this. I can accelerate a little bit and english the bike in. In turn eight, it's the same thing. I'm rolling off before turn eight. I couldn't imagine getting it to go through there just pegged, flat out all of the way through. Now the changes we made are going in the right direction. It's giving me feedback, and I'm getting more comfortable each time I ride the bike. Now it's in a place I feel I can work with it." Although Sorbo's times were improved, he didn't run into the ground clearance problems that Sands and Ulrich found when lapping at 1:34.

When asked to rank the 600s, Ulrich said, "Suzuki, Yamaha, then Honda. The Suzuki's f-king fast, you know. It's got the power, and it's smooth coming on. The chassis is really good, too. I mean the chassis are comparable. If I had to buy something, I'd buy a Suzuki. The Yamaha has got a good chassis. The motor's a bit weak on acceleration, but it seems to make up for that in the handling. The throttle response on the Honda is really good because of the injection, but the whole package isn't there. It flexes more than the other bikes, the power's not there, the ground clearance is not there, the chassis is not there. It may be good to ride around on the street, but it's not so good for the racetrack."

Sands said, "Yamaha, Suzuki, then Honda. The Yamaha is the most stable. I mean, it's by far the most rider-friendly bike. The Honda's rider-friendly, too. As far as a track bike, the Yamaha is solid, it's steady, it goes where you want it to go. I was able to actually...if I was in the corner, I was able to change lines more with the Yamaha than the Suzuki or the Honda. I had a lot more confidence than fear of the Yamaha. I could lean it over farther than either of the other two bikes. When I did lean it over farther, it might tuck the front a little bit, but it would kind of get the thing to turn a little better. If I did that on the Suzuki, the whole bike would start to wobble and the rear would break loose a lot more abruptly than on the Yamaha. The Honda came in last because it's soft. It's a softie. It's got too much pipe, dude. Way too much pipe."

Sorbo's rankings matched Sands', being Yamaha, Suzuki, then Honda. Sorbo said, "The Yamaha wins because it has maximum 'Ed feel.' The Suzuki and it do all of the same things on the track, the power seems the same near as I can tell, the brakes are the same, everything's the same. It's just the Yamaha feels smaller, and I like that. It's more comfortable to me. The bike fits my frame well. I think the biggest difference is in the width of the Suzuki's gas tank. The mass is centralized on the R6. My arms are bent when I'm on the Yamaha where on the Suzuki I'm stretched out. The Honda is a really distant third. It is the most street oriented. When I try to hang off (the Honda), my inside arm, the wrist has to bend too much. The power is not as wide on the Honda. It took so much work just to get the thing to be capable, to get the thing to stay online. Another factor for anyone is to pick the bike that pays the best contingency in your area."

For the big bikes, we pared our testing down to just Sands and Ulrich to save some time. For this test, we sent Sands and Ulrich out together to play so that they could directly compare what the bike they were riding was doing compared to the other. It became very clear, very quickly what the outcome of this track comparison was going to be.

Ulrich rode the YZF-R1 first and said, "The first impression is alright. I'm not particularly fond of it right now. It started dragging the pegs. It's pretty fast, but I think my Suzuki 750 race-bike is faster than that thing. It doesn't give you a lot of feedback from either end. Sort of vague. My first initial impression was that it wasn't very fun to ride. Brakes were decent, not so great. Turn-in was okay. Mid-corner was fine, pretty stable. Corner exits were okay but the bike was a bit down on acceleration. The motor's decent but it can be better."

Sands' comments were a little less reserved after riding the Suzuki 1000: "Holy f-k! That thing is f-king bad! It's the best streetbike that I've ever ridden by far. Motorwise, I've ridden Superbikes with less power than that, you know? I mean, it's incredible. Even the way the power comes on is so predictable. It's not like it hits hard or anything. You can pick it up and just feed it on. Within five laps, I was already starting to feel comfortable on it. And the chassis is rock solid! I mean just good! I mean, I can't think of any changes that I want to make right now. We should just go with it the way it is." Then Sands paused, at a loss for words. We asked about the Suzuki's brakes to get Sands started again, "Brakes? They gotta be good to get that thing stopped. Yeah, they're f-king good. Turn-in was great, excellent. It feels like the 600s going in. It's real stable and feels planted going in. Mid-corner I was able to change direction with the thing. It feels like a 600 really. It's just f-king with it in everything. I mean, I don't feel like I'm riding a 1000. It's similar to the R1 in that respect. It feels like it's a small bike with a big motor. It seemed really flickable, too. Coming down from four

continued on page 45



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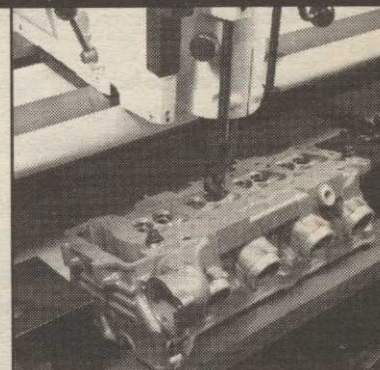
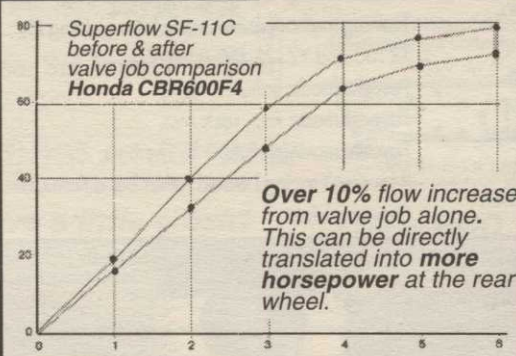
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No New Up-And-Coming Talent In The U.S.? No Way!

By David Swarts

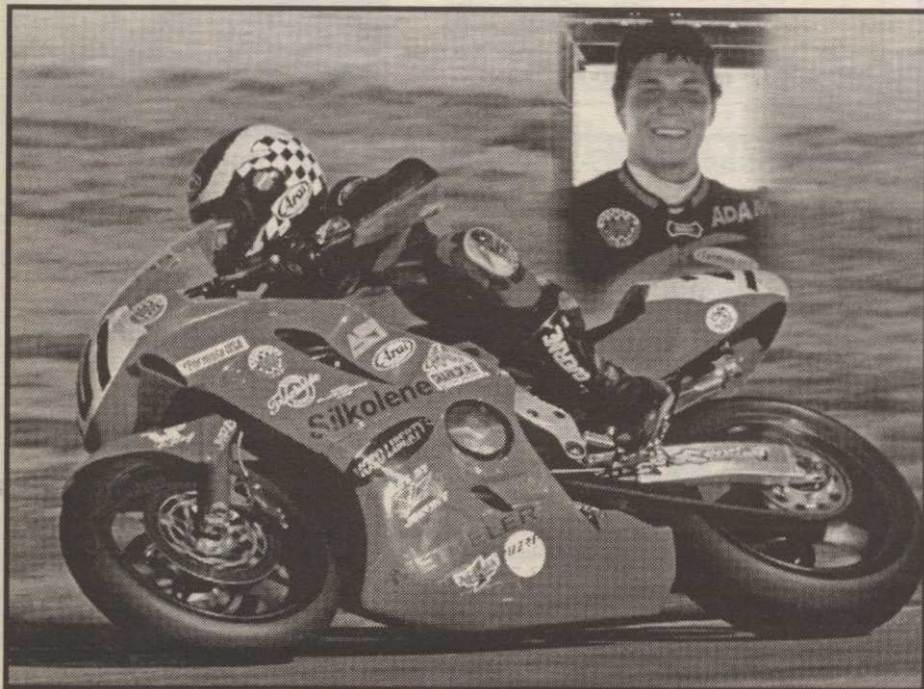
Roadracing World first published the annual Young Guns feature in 1998, in response to the myth that the United States had no new, young, up-and-coming racing talent. To be included, riders must be under 20 years old, be actively competing in a series on a 125cc or larger machine in America or Canada, and have finished on the podium (top three) in a sanctioned race. Young Guns who have celebrated their 20th birthday and gone on to racing success on the National stage include Tommy Hayden, Michael Hannas and Chris Ulrich, while Young Guns who have found continued success on the local and regional level include Ryan Burke and Justin Long. Graduating Young Gun John-O Bowman missed the entire 2000 season while recovering from injuries suffered in late 1999.

It's interesting to note that 8 out of 24 Young Guns list winning the 500cc World Championship as their ultimate career goal, while 5 list winning the Superbike World Championship as their ultimate career goal. Here, in alphabetical order, are the Young Guns, class of 2001.

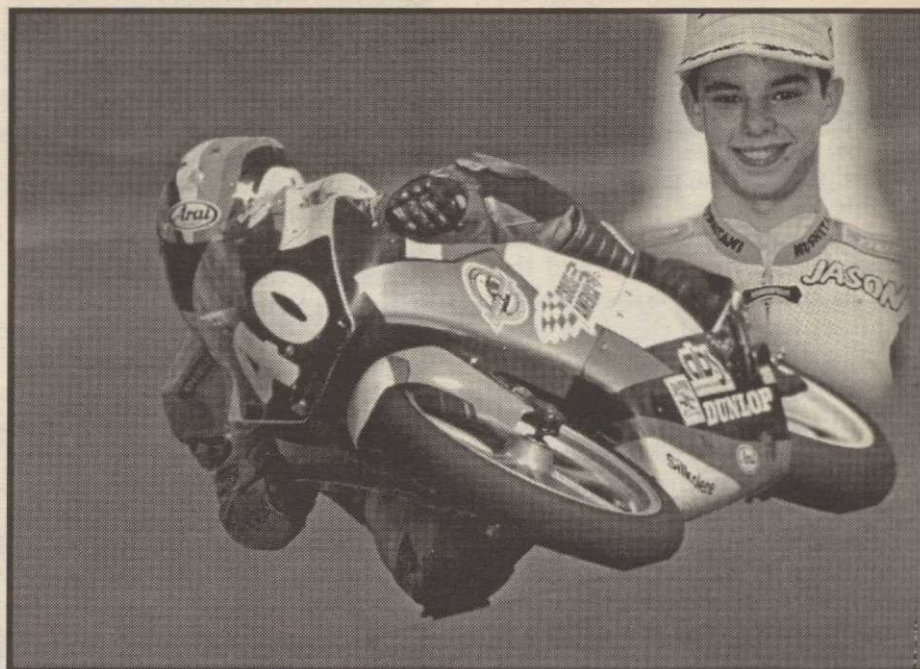
Adam Coco

Date of birth/age: August 27, 1981/19.
Birthplace: Garland, Texas.
Current home: Garland, Texas.
Current height/weight: 5'10"/ 160 pounds.
Current school/grade: Graduated High School.
Began riding at age: 3 years.
First motorcycle: Suzuki JR50.
First race bike: Honda CR80.
First race (if other than a road race): 1991, motocross, Mosier Valley, 80cc Beginner, 4th.
First road race: 1998, CMRA, Oak Hill Raceway, Provisional Novice, 1st.
Current racebike: Honda CBR600F4.
Tuner/mechanic: Johnny Hodgkiss.
Races/series now competing in: F-USA, CMRA, WERA, AMA.
Sponsors: M4 Exhausts, Lockhart-Phillips, Dyno Jet, Dallas Honda, Moto Liberty, sliderwoman.com, ARI knee sliders, Silkolene, Vesrah, AM Leathers, and Fast By Johnny.
Racing accomplishments (so far): 2000 season, 14th F-USA Sportbike Daytona, 15th F-USA Sportbike Road America, four race wins in WERA/RPM C Superbike Expert, three race wins in CMRA/CCS 600cc Supersport Expert South Cen-

tral; 1999 season, WERA 750cc Superbike Novice Sportsman National Champion, third place WERA 600cc Superbike Novice National Challenge Series, six WERA National wins, one CMRA win, 80cc GNC Motocross Champion.
2001 racing goals: Win the F-USA Sportbike Championship.
Racing career goals beyond 2001: Win Superbike World Championship.
Riding strengths: Bumpy tracks, ride smart, late braking, rain (two wins in rain).
Riding weaknesses: Lack of experience, lack of funds.
Racing heroes: Jeremy McGrath, Kenny Roberts Sr.
Favorite things about racing: The challenge, the competition, traveling, the people at the racetrack.
Worst things about racing: That there's an off-season, the cost.
Favorite track(s): Road Atlanta, Hallett.
Hobbies: Snow boarding, parasailing, surfing, skateboarding, sky skiing, wake boarding.
Training method(s): Mountain biking, riding my XR100 and YZ125, lifting weights.
Favorite foods: Italian.
Favorite music: Rap, rock.
Favorite movie(s): Take It To The Limit.
If I weren't racing I would rather be: a Formula One car driver.



Adam Coco won seven Expert races in Texas during 2000 and branched out to finish top-15 in Formula USA Sport Bike competition.



Jason DiSalvo (40) came out of the WERA National Challenge Series and headed for Europe on a Honda RS125. He'll return to Europe on a Honda RS250 in 2001 with a few U.S. appearances as well. Photo by Camera Sport.

Jason DiSalvo

Date of birth/age: February 9, 1984/16.
Birthplace: Batavia, New York.
Current home: Stafford, New York.
Current height/weight: 5'21/2"/ 122 pounds.
Current school/grade: Notre Dame Catholic High School/10th.
Began riding at age: 2 years.
First motorcycle: Dandy 40.
First race bike: Suzuki JR50, Yamaha YSR50.
First road race: 1992, YSR50, AMRRA World Championship.

Novice Lightweight Twins National Champion, fifth in WERA 125cc GP National Series, third in WERA Heavyweight Twins Novice Championship, third in WERA 125cc GP National Road Atlanta, several dirt track Championships.

2001 racing goals: Finish top three in European Championship, win AMA 250cc Grand Prix at Daytona, qualify for a full year racing in GPs.
Racing career goals beyond 2001: Repeat Freddie Spencer's feat of winning the 500cc and 250cc Grand Prix World Championships in the same year.



Carlin Dunne (34) had his 2000 road racing season derailed by an injury at Daytona but came back to lead an off-road race on a Honda XR600 and is looking forward to the 2001 road racing season.

Current racebike: 2001 Honda RS250.
Tuner/mechanics: Marco "Brains" Woodage, John Mowatt.
Races/series now competing in: European Open Championships 250cc GP, AMA 250cc GP.
Sponsors: Applied Business System, Cruise America, Freddie Spencer's High Performance Riding School, Dunlop, Mom, Dad.
Racing accomplishments (so far): 2000 season, 5th in British 125cc Grand Prix Championship with two wins, 17th in European 125cc Grand Prix Championship; 1999 season, WERA 125cc Grand Prix National Challenge Series Champion, GPRA Eastern Division Champion, AMA Road Racing Horizon Award winner, qualified for two FIM GPs, youngest American to ever race in FIM GP, second in Czech Republic 125cc National at Most, seventh in British Super Cup 125cc National at Oulton Park; 1998 season, WERA Sportsman

Riding strengths: Trail braking.
Riding weaknesses: Crashes.
Racing heroes: Freddie Spencer.
Favorite things about racing: The feel of defying the laws of physics.
Worst things about racing: Crashing, traveling, being away from home.
Favorite track(s): Road Atlanta, Assen, Callaunga.
Hobbies: Snow boarding, play riding.
Training method(s): Working out, running.
Favorite foods: Chinese.
Favorite music: Jurassic Five.
Favorite movie(s): The Matrix, The Learning Curve.
If I weren't racing I would rather be: Doing anything on a moving vehicle.

Carlin Dunne

Date of birth/age: May 16, 1983/17.

Birthplace: Santa Barbara, California.
Current home: Santa Barbara, California.
Current height/weight: 6'3" / 170 pounds.
Current school/grade: Bishop Diego High/ 12th.
Began riding at age: 2 years.
First motorcycle: Suzuki JR50.
First race bike: Suzuki RM80.
First race (if other than a road race): 1993, LACR motocross, Suzuki RM80.
First road race: 1997, WSMC, Honda FT500 Ascot.

Current racebike: 2001 Honda CBR600F4i.
Tuner/mechanics: Self, Trevor Dunne (father).
Races/series now competing in: F-USA 600cc Sportbike, CCS, AFM.
Sponsors: Honda of Santa Barbara, Galfer, Pilot, Garne, Sharkskin, AFAM, Dyno Cycle, Dad, Momouth Moving and Storage.

Racing accomplishments (so far): 2000 season, crashed at Daytona and broke femur, finished 15th in Baja 2000 Open Sportsman on a Honda XR600 (led early in the race); 1999 season, WSMC 500cc Singles Champion, WSMC Formula Singles Champion, third in WSMC Vintage Lightweight, top 10 in WSMC overall points; 1998 season, WSMC 500cc Singles Champion, third in WSMC Formula Singles Series.

2001 racing goals: Develop skills on 600.
Racing career goals beyond 2001: Win 500cc Grand Prix and World Superbike Championships, win the Baja 2000.

Riding strengths: Starts, late braking, sliding.

Riding weaknesses: Throttle control.

Racing heroes: Mick Doohan, Kenny Roberts Sr. & Jr., and Dad.

Favorite things about racing: The rush that the craziness gives you, the atmosphere.

Worst things about racing: Crashing, having to fix your bike, looking for new sponsors.

Favorite track(s): Willow Springs, Buttonwillow, Sears Point.

Hobbies: Mountain biking, motocross.

Training method(s): Motocross, working out.

Favorite foods: Mexican food.

Favorite music: Heavy metal, Pantera, ICP.

Favorite movie(s): Billy Madison.

If I weren't racing I would rather be: A rich computer geek.

Jeffrey Harder

Date of birth/age: May 17, 1986/14.

Birthplace: Dallas, Texas.

Current home: Princeton, Texas.

Current height/weight: 5'2" / 90 pounds.

Current school/grade: Clark Middle School/ 8th.

Began riding at age: 4.

First motorcycle: Yamaha PW50.

First race bike: Honda CR80.

First Race (If Not a Road race): Motocross, Greenville MX Park, Greenville, Texas, 80cc 7-11 years, 8th.

First road race: Texas World Speedway, Lightweight GP, 4th.

Current racebikes: Honda RS125, 600cc Rotax, Honda CR80.

Tuner/mechanics: Jeff Harder, Jaime Reyes, John Orchard.

Races/series now competing in: CMRA/CCS.

Sponsors: Harder Racing Development (HRD), Moto Liberty.

Racing accomplishments (so far): 2000 season, seventh in WERA/RPM South Central Region Lightweight 50-Miler, eighth in Formula 2 (won only race competed in), 10th in 125cc GP Championships, eighth in CMRA/CCS South Central Region Middleweight GP, ninth in Lightweight GP, 11th in GT Lights, 11th in Singles GP Championships (several podium finishes), second in AMA dirt track 80cc Championship Texas region; 1999 season, first in CMRA Heartland

.....
 continued on page 34



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Park Heavyweight Mini, eighth overall in AMA Amateur 80cc dirt track Nationals; 1998 season, several 80cc amateur dirt track wins.

2001 racing goals: Win WERA 125cc Grand Prix race at GNF, win WERA/RPM 125cc GP South Central Championship.

Racing career goals beyond 2001: To race over in Europe.

Riding strengths: Starts.

Riding weaknesses: First laps.

Racing heroes: My dad.

Favorite things about racing: The thrill of winning.

Worst things about racing: Crashing, getting hurt and not being able to race.

Favorite track(s): Road Atlanta.

Hobbies: Baseball, basketball, football.

Training method(s): Play riding on Dad's short track.

Favorite foods: Steak, tacos.

Favorite music: Limp Bizkit.

Favorite movie(s): None.

If I weren't racing I would rather be: I'd rather be tuning bikes in my dad's shop.

Nicky Hayden

Date of birth/age: July 30, 1981/19.

Birthplace: Owensboro, Kentucky.

Current home: Owensboro, Kentucky.

Current height/weight: 5'9"/160 pounds.

Current school/grade: Graduated Owensboro Catholic High School.

Began riding at age: 4 years.



Jeffrey Harder (201) won a WERA/RPM Formula 2 Regional Novice race on his Honda RS125 and hopes to win the regional 125cc GP Expert title in 2001.

Mile Hagerstown, Maryland; 1998 season, fourth in AMA 600cc Supersport, fourth in AMA 750cc Supersport.

2001 racing goals: Win the Daytona 200 and AMA Superbike Championship, win dirttrack mile and TT.

Racing career goals beyond 2001: Be 500cc Grand Prix World Champion.

Riding strengths: Sliding.

Riding weaknesses: Riding in the rain, starts, throttle control, set-ups.

Racing heroes: Gary Nixon, Bubba Shobert.

School/ 12th.

Began riding at age: 5 years.

First motorcycle: Yamaha PW50.

First race bike: Yamaha PW50.

First race (if not a road race): 1988, dirt half-mile, Mayfield, Kentucky.

First road race: 1994, Oak Hill, Texas, YSR50, CMRA.

Current racebikes: 2001 Honda CBR600F4i, CBR929RR.

ing, American Honda, Pro Honda Oils & Chemicals, Dunlop, Alpinestars, Arai, Sharkskinz, AFAM, Nutec, and SRO Las Vegas.

Racing accomplishments (so far): 2000 season, fifth in AMA 750cc Supersport and 14th in AMA 600cc Supersport Championships; 1999 season, 15th in AMA 750cc Supersport Championship, 21st in the AMA 600cc Supersport Championship, set track record Gateway International Raceway (revised course), won several WERA Regionals; 1998 season, second in GSX-R600 Suzuki Cup Final, 10th in WERA 600cc Superstock Series (competed in six of 10 rounds).

2001 racing goals: Podium in AMA 600cc Supersport and win at least one, win FX races.

Racing career goals beyond 2001: Be 500cc Grand Prix World Champion.

Riding strengths: Starts, braking, fast tracks.

Riding weaknesses: Tight tracks.

Racing heroes: Gary Nixon, Kenny Roberts, Kevin Schwantz.

Favorite things about racing: Winning.

Worst things about racing: Losing, crashing.

Favorite track(s): Road Atlanta, Laguna Seca, Willow Springs, Indy mile.

Hobbies: Trail riding, hanging out.

Training method(s): Trail riding, going to the gym, bicycle riding, jogging.

Favorite foods: Pizza.

Favorite music: Alternative and Rap.

Favorite movie(s): How To Be A Player.

If I weren't racing I would rather be: A normal kid.



Nicky Hayden (69) has already won the AMA 600cc Supersport Championship and has his eyes on the AMA Superbike Championship in 2001. Photos by Colin Fraser.



Roger Lee Hayden (95) showed he could lead AMA Supersport races in 2000. For 2001 he's riding in AMA 600cc Supersport and Formula Xtreme. Photos by Colin Fraser and Brian J. Nelson.

First motorcycle: Yamaha PW50.

First race bike: Yamaha PW50.

First race (if not a road race): 1985, dirt short track, Marion, Kentucky.

First road race: October 1991, Katy, Texas Mini Series.

Current racebike: 2001 Honda RC51.

Tuner/mechanics: Dan Fahie, David Jones, Merlyn Plumlee, Ray Plumb.

Races/series now competing in: AMA Superbike.

Sponsors: American Honda, Universal Studios, Dunlop, HP4 Oils, Arai, Joe Rocket, Jardine, AFAM, DID, Keihin, Genuine Honda Brake Pads.

Racing accomplishments (so far): 2000 season, second in AMA Superbike Championship with four wins, 12th in AMA 600cc Supersport Championship, won AMA GNC short track at Springfield, Illinois; 1999 season, AMA 600cc Supersport Champion, second in AMA Formula Xtreme (seven wins), third in AMA Superbike race at Pikes Peak, Ricky Graham Grand National Dirt Track Rookie of the Year, AMA/Speedvision Pro Athlete of the Year, AMA Pro Sportsman of the Year, first in AMA Grand National Dirt Track Half-

Favorite things about racing: The competition, the thrill of winning, and getting paid to chase your dream.

Worst things about racing: Losing, traveling, and flight attendants.

Favorite track(s): Road America, Hagerstown, Maryland.

Hobbies: Racing flattrack, hanging out with my crew.

Training method(s): Riding motocross, mountain biking, going to the gym.

Favorite foods: Pasta.

Favorite music: Rap, rock.

Favorite movie(s): Ace Ventura, Blue Streak.

If I weren't racing I would rather be: I'd be racing something.

Roger Lee Hayden

Date of birth/age: May 30, 1983/17.

Birthplace: Owensboro, Kentucky.

Current home: Owensboro, Kentucky.

Current height/weight: 5'6"/145 pounds.

Current school/grade: Owensboro Catholic High

Tuner/mechanics: Bruce Transportation Group.

Races/series now competing in: AMA 600cc Supersport and Formula Xtreme.

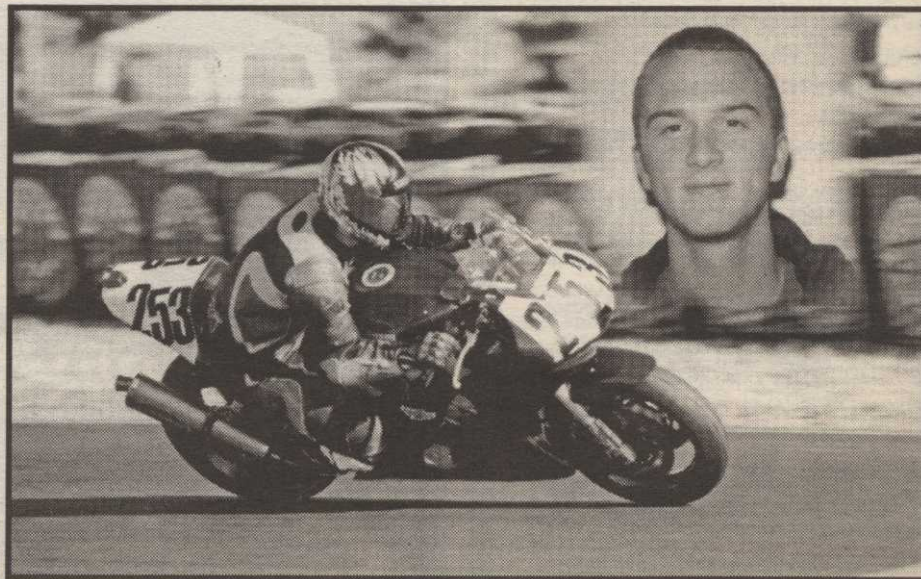
Sponsors: Bruce Transportation Group, Erion Rac-

Nathan Hester

Date of birth/age: December 1, 1982/17.

Birthplace: Sand Point, Idaho.

Current home: Priest River, Idaho.



Nathan Hester (253) finished third in the 2000 OMRRA 600cc Superbike Championship and co-rode to an overall win in an OMRRA endurance race. Action photo by Photo Girl.

Current height/weight: 6'0" / 175 pounds.
Current school/grade: North Idaho College/ Second year.

Began riding at age: 12 years.

First motorcycle: Honda XR250.

First race bike: 1998 Honda CR125.

First race (if other than a road race): 1998, Spokane, Washington, Motocross, 125cc Beginner.

First road race: 1999, Seattle International Raceway, 600cc Supersport Novice, CBR600F4.

Current racebike: 2000 Yamaha YZF-R6.

Tuner/mechanics: Shawn Roberti, Fast by Gary.

Races/series now competing in: AMA, F-USA, OMRRA, WMRA.

Sponsors: Hester Racing, Shawn Roberti Racing Services, Ponderay Yamaha, Beaudry Motorsports, Lockhart-Phillips, and Northwest All-Terrain.

Racing accomplishments (so far): 2000 season, third in OMRRA 600cc Superbike Championship, one overall win and second overall in two OMRRA endurance races (raising \$4000 for charity), 12th in Portland F-USA Sportbike; 1999 season, second in Oregon Amateur Roadracing Championship, first in Amateur 600cc Supersport Portland International Raceway, third in 600cc class 4-hour endurance OMRRA race (with Dad on FZR400), second in Under The Hill motocross series Extreme Motorsports Complex, third in 125cc Junior motocross series, won three PJ1 Arenacross Beginner class races on three different tracks.

2001 racing goals: Finish top three in overall OMRRA/WMRA Championships.

Racing career goals beyond 2001: Win AMA 600cc or Superbike Championship.

Riding strengths: Smooth, consistent.

Riding weaknesses: Keeping concentration.

Racing heroes: Mick Doohan.

Favorite things about racing: It's all fun, talking to people on the pits.

Worst things about racing: The cost.

Favorite track(s): Daytona, PIR, Spokane Raceway Park.

Hobbies: Motocross, cruising.

Training method(s): Motocross, weights, treadmill.

Favorite foods: Italian food.

Favorite music: Green Day.

Favorite movie(s): Fight Club.

If I weren't racing I would rather be: Running a bike shop.

Jake Holden

Date of birth/age: May 5, 1983/17.

Birthplace: Tacoma, Washington.

Current home: Puyallup, Washington.

Current height/weight: 6' / 160 pounds.

Current school/grade: Emerald Ridge High School/ 11th.

Began riding at age: 4 years.

First motorcycle: Suzuki 50 quad.

First race bike: Honda MR50.

First race (if other than a road race): 1989, Castle Rock, dirt track, modified 50, 2nd.

First road race: 1998, Seattle International Raceway, WMRA, 125cc Pro, fifth.

Current racebike: Suzuki GSX-R750.

Tuner/mechanic: Gary Ricci, Ricci Motorsports.

Races/series now competing in: AMA 750cc Supersport and Superbike.

Sponsors: Ricci Motorsports, Dunlop, Race Tech, Bardahl, Factory, Fox, EBC, Dinar, Head Games, SBK DiVinci, Full Spectrum, Air Tech, and Elf.

Racing accomplishments (so far): 2000 season, 13th AMA 750cc Supersport Brainerd, qualified 18th for Superbike race Brainerd, qualified in top 20 for 750cc and Superbike races at Sears Point, Road Atlanta, and Pikes Peak; 1999 season fourth WMRA 750cc Supersport and fifth WMRA 750cc Superbike; 1998 season, WMRA 125cc Champion; 1996 season, fifth overall 250cc National dirt track, third 80cc National dirt track;

continued on page 36

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Vicky Jackson-Bell, GPRA 125 National Champion

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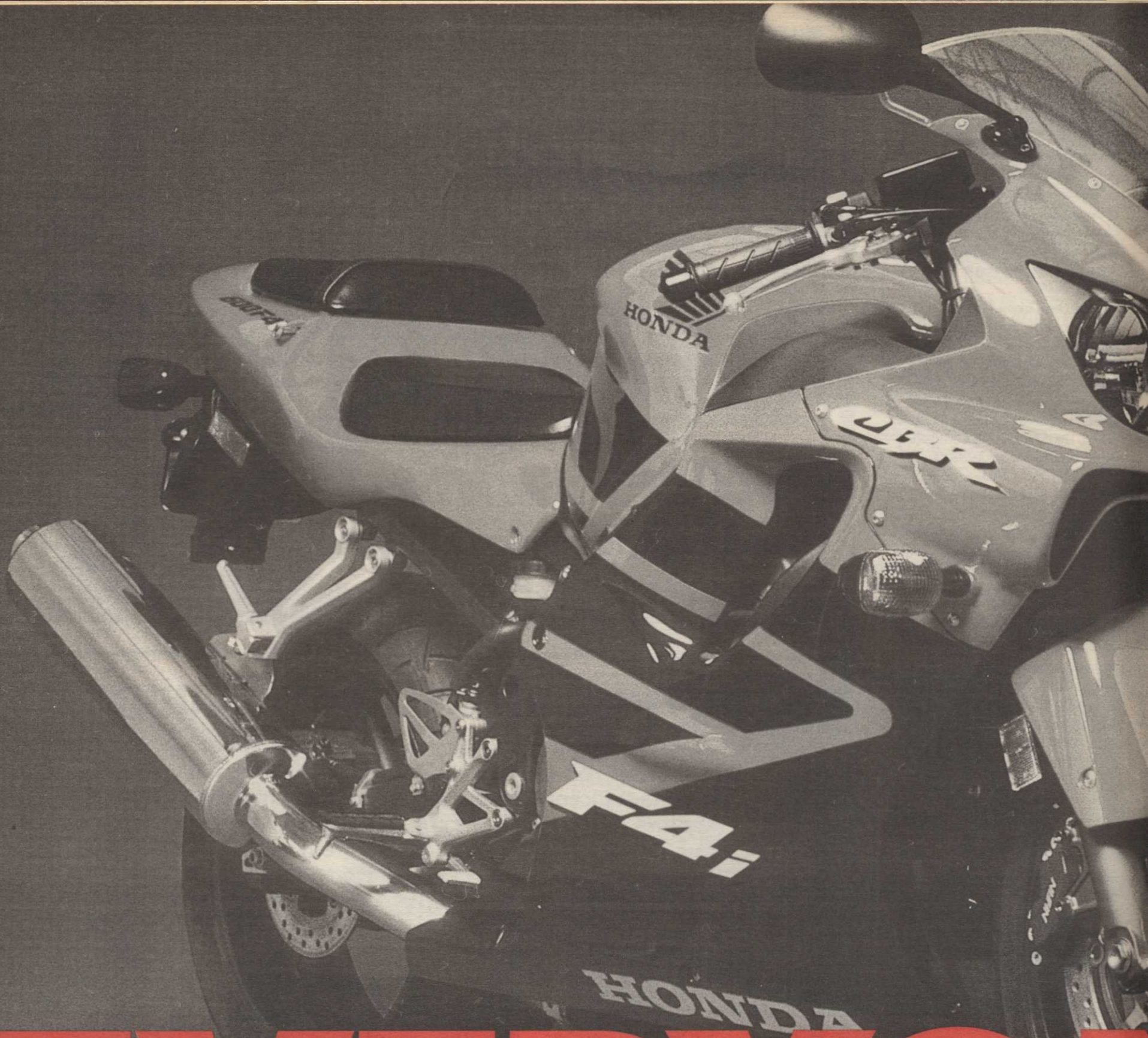
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Young Guns

continued from page 35

1995 season, 80cc AMA Grand National Champion; 1993 season, AMA National Champion in three dirt track classes.

2001 racing goals: To not crash, and finish top 10 in AMA 750cc Supersport.

Racing career goals beyond 2001: Ride in 500cc GPs.

Riding strengths: Starts.

Riding weaknesses: Not being aggressive enough.

Racing heroes: Nicky Hayden, Kenny Roberts Jr. & Sr.

Favorite things about racing: Going fast, the adrenaline rush, winning.

Worst things about racing: Crashing, DNfing.

Favorite track(s): Sears Point, Daytona, and Lodi Cycle Bowl.

Current home: Ramona, California.

Current height/weight: 5'10"/ 140 pounds.

Current school/grade: Futurebound Home Study/ 12th.

Began riding at age: 4 years.

First motorcycle: Honda Mini Trail 50 cc.

First race bike: Honda Mini Trail 50cc.

First race (if not a road race): 1987, motocross, Ascot Park, Gardena.

First road race: 1990, Adams Kart Track, Riverside, California, 50cc Beginner Stock, NMA.

Current racebikes: 2001 GSX-R750, 2001 GSX-R600, 2001 GSX-R1000.

Tuner/mechanics: Barry McMahan, Keith Perry.

Races/series now competing in: AMA 750cc Supersport, AMA 600cc Supersport, AMA Formula Xtreme, Formula USA Unlimited Superbike, Formula USA Sport Bike.

Sponsors: Valvoline, EMGO, Suzuki, Michelin,



Jake Holden (263) was the 1998 WMRA 125cc GP Champion and went on to finish top-15 in AMA Supersport races in 2001. Action photo by Photo Girl.

Hobbies: Basketball, water skiing, snow skiing, golf, trail riding, wake boarding.

Training method(s): Riding XR100 and CR250, weight training.

Favorite foods: Chinese.

Favorite music: Limp Bizkit, Nelly.

Favorite movie(s): CKY2K.

If I weren't racing I would rather be: A race mechanic or team owner.

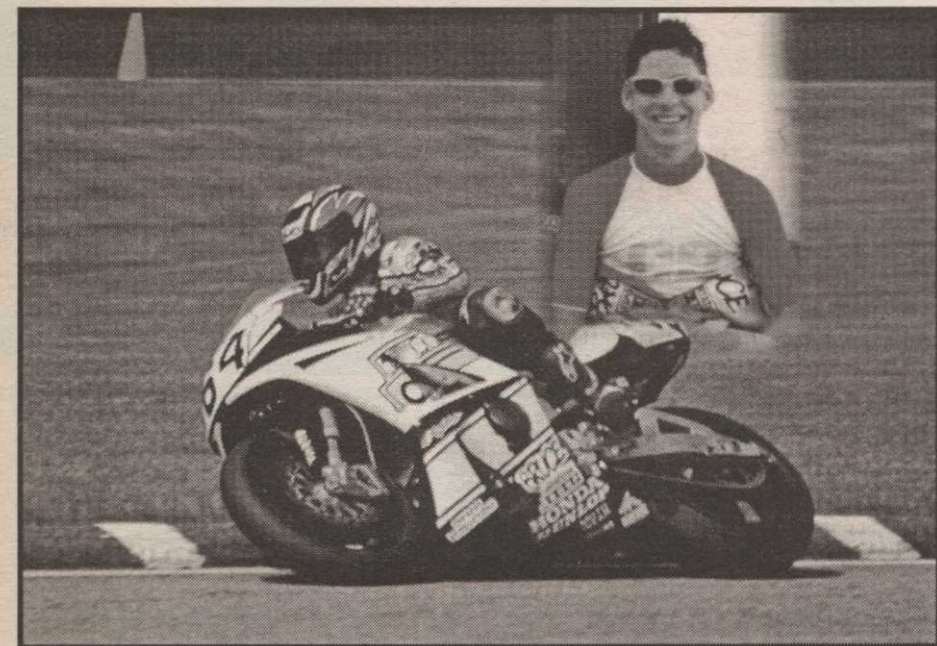
John Hopkins

Date of birth/age: May 22, 1982/17.

Birthplace: Whittier, California.

M4 Exhausts, SBS, Arai, Dynojet, Tsubaki, Lockhart-Phillips, Penske, Street & Competition, GMD Computrack, Air-Tech, Kushitani, Performance Machine, Wiseco, Graves, Sprocket Specialists, Traxion Dynamics, WSMC and Team Hammer Advanced Riding School.

Racing accomplishments (so far): 2000 season, won AMA 750cc Supersport Championship, sixth in AMA Formula Xtreme Championship, second in Formula USA Unlimited Superbike Championship (won seven of 12 races), fifth in Formula USA Sportbike Championship (two wins), tested Red Bull Yamaha YZR500 GP bike; 1999 season, won



Kevin Lacombe had a tough year with the Bruce Transportation Group in 2000 but hopes for a strong comeback in the 2001 Canadian Superbike Series.

Aprilia Cup Challenge Championship, won Suzuki GSX-R600 Cup Final, second in Suzuki GSX-R750 Cup Final, finished third in NASB Sportbike at Daytona (Fall), won four CCS National Championships (GTU, Unlimited Supersport, Heavyweight Superbike, and Mediumweight GP); 1998 season, won WSMC Formula One December Round, finished fifth in Laguna Seca AMA 125cc GP Exhibition Race, finished fourth in WSMC F2 Championship, won numerous mini GP racing

Kevin Lacombe

Date of birth/age: February 22, 1983/17.

Birthplace: Grand Bay, Quebec, Canada.

Current home: Longview, Texas.

Current height/weight: 5'10"/ 145 pounds.

Current school/grade: University of Texas Home School/12th.

Began riding at age: 3 years.

First motorcycle: Yamaha PW50.

First race bike: Honda CR125 ice racer.



John Hopkins (21) won the AMA 750cc Supersport Championship, finished second in the Formula USA Unlimited Superbike Championship and got a test ride on a YZR500 in 2000. Photos by Brian J. Nelson.

Championships.

2001 racing goals: Be top three in AMA 600cc Supersport and Formula Xtreme points.

Racing career goals beyond 2001: Be the next American 500cc Grand Prix World Champion.

Riding strengths: Cornering, braking, starts, endurance.

Riding weaknesses: Pressure situations.

Racing heroes: Mick Doohan, Jeff Emig, Wayne Rainey.

Favorite things about racing: Winning, having a good race, the money doesn't hurt.

Worst things about racing: Losing, crashing, breakdowns and riders who don't hold their line.

Favorite track(s): Road Atlanta, Laguna Seca, Road America.

Hobbies: Surfing, skateboarding, snowboarding, fishing and dirt biking.

Training method(s): Practicing for lower lap times, mental training.

Favorite foods: Spaghetti, pizza.

Favorite music: Punk rock, alternative.

Favorite movie(s): Deegan Says, Fresno Smooth.

If I weren't racing I would rather be: Surfing, snowboarding, or motocrossing.

First race (if not a road race): 1993, Grand Bay, ice race.

First road race: 1996, Shannonville, Ontario, Canada, GSX-R600.

Current racebikes: 2000 CBR600F4, 2000 CBR929RR.

Tuner/mechanics: TBA.

Races/series now competing in: F-USA Sportbike and Unlimited Superbike, Canadian Superbike Series.

Sponsors: TBA.

Racing accomplishments (so far): 2000 season, 14th in AMA 600cc Supersport Championship, 10th in AMA Formula Xtreme Championship; 1999 season, 2nd in AFM (Canada) Pro Racing 600cc Championship, won two 250cc CMRC ice racing Championships.

2001 racing goals: Win the Formula USA Championship.

Racing career goals beyond 2001: Be Superbike World Champion.

Riding strengths: Sliding.

Riding weaknesses: Need more experience.

Racing heroes: Miguel Duhamel, Carl Fogarty, Pascal Picotte, Valentino Rossi.



Ryan Landers (140) spent 2000 getting back in form following two years of suffering injury after injury. The highlight of his season was finishing third in Formula USA Sport Bike at Portland. Action photo by Brian J. Nelson.

Favorite things about racing: Winning.
 Worst things about racing: Crashing.
 Favorite track(s): Road Atlanta, Laguna Seca.
 Hobbies: Dirt bike riding.
 Training method(s): Going to the gym.
 Favorite foods: Pasta.
 Favorite music: Limp Bizkit.
 Favorite movie(s): Bad Boys, Elvis Grudom 2 (Canadian).
 If I weren't racing I would rather be: A race mechanic.

Ryan Landers

Date of birth/age: March 20, 1982/18.
 Birthplace: Tyler, Texas.
 Current home: Weatherford, Texas.
 Current height/weight: 5'11"/140 pounds.
 Current school/grade: Graduated Texas Tech University Home School.
 Began riding at age: 5 years.
 First motorcycle: Kawasaki KX60.
 First race bike: Yamaha YSR50.
 First road race: 1994, Denton Raceway, CMRA, Texas Mini GP.
 Current racebikes: Yamaha YZF-R6 and YZF-R1.
 Tuner/mechanics: Chuck Giacchetto, Jim Cambora.
 Races/series now competing in: Formula USA Sport Bike, AMA 600cc Supersport.
 Sponsors: Shogun Motorsports, Landers Motorsports, Mot on Cycle Sports, Metzeler, Mom and Dad.
 Racing accomplishments (so far): 2000 season, seventh in Formula USA Sportbike Championship, fifth in Suzuki GSX-R600 Cup Finals, two WERA Nationals podiums in one appearance; 1999 season, third in Aprilia Cup Challenge race at Texas World; 1998 season, CMRA F2 Champion, won F2 race at WERA National Challenge Texas World, finished second in F2 race at WERA National Challenge Road Atlanta GNF.
 2001 racing goals: Contend for F-USA Sport Bike Championship.
 Racing career goals beyond 2001: Be Superbike World Champion.
 Riding strengths: Corner speed, traffic, tight infields.
 Riding weaknesses: First laps.
 Racing heroes: Kenny Roberts (the original), Wayne Rainey, Kevin Schwantz.
 Favorite things about racing: Winning, traveling.
 Worst things about racing: Crashing my brains out, \$\$\$.
 Favorite track(s): Daytona, Portland.
 Hobbies: Racing, play riding.
 Training method(s): Riding XR100s on Dad's short track, mountain biking.
 Favorite foods: Mexican.
 Favorite music: Punk and alternative rock.
 Favorite movie(s): The Matrix.
 If I weren't racing I would rather be: Racing sprint cars.

Barrett Long

Date of birth/age: April 9, 1984/16.
 Birthplace: Miami, Florida.
 Current home: Miami, Florida.
 Current height/weight: 5'10"/140 pounds.
 Current school/grade: Coral Gables High School/11th.
 Began riding at age: 4 years.
 First motorcycle: Yamaha PW50.
 First race bike: Yamaha YSR50.
 First road race: 1998, WERA, Road Atlanta.
 Current racebikes: Yamaha TZ125.
 Tuner/mechanics: John Long (Dad).
 Races/series now competing in: CCS.
 Sponsors: Longevity Racing, Shoei, Alpinestars, Dainese.
 Racing accomplishments (so far): 2000 season, CCS GP Singles Amateur National Champion, CCS Florida GP Singles Regional Champion; 1999 season, four wins in CCS, took fourth at Roebing Road in rain on slicks.

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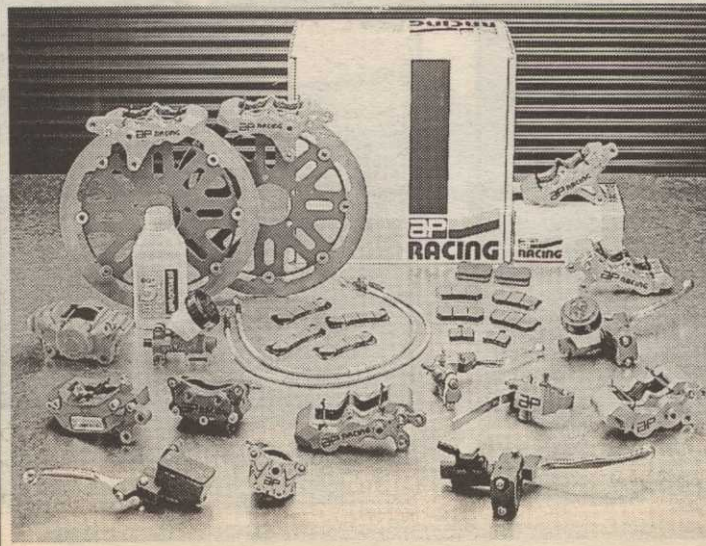
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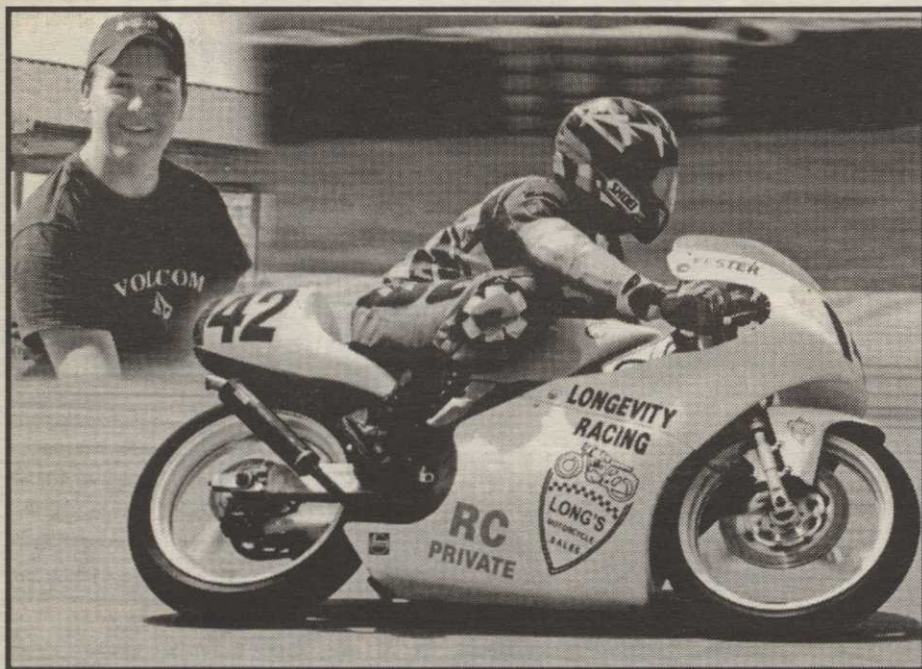


2001 racing goals: Win CCS Lightweight GP Championship on 250.
Racing career goals beyond 2001: Win 500cc GP Championship.
Riding strengths: Braking.
Riding weaknesses: Too much rear brake.
Racing heroes: Mick Doohan, Carl Fogarty, and my dad.
Favorite things about racing: The speed.
Worst things about racing: Losing.
Favorite track(s): Road Atlanta, Roebling Road, Carolina Motorsports Park.
Hobbies: Freestyle biking.
Training method(s): YSR50 riding.
Favorite foods: Chicken, pork chops.
Favorite music: Punk.
Favorite movie(s): Billy Madison.
If I weren't racing I would rather be: Riding my bicycle or sleeping.

Mike Mashewske

Date of birth/age: April 20, 1982/18.
Birthplace: Geneva, New York.
Current home: Dundee, New York.
Current height/weight: 6' 2" / 150 pounds.
Current school/grade: Dundee Central School/ 12th.
Began riding at age: 9 years.
First motorcycle: 1978 Yamaha YZ80.
First race bike: 1978 Yamaha YZ80.
First road race: 1998, Talladega, Honda RS125, 1st.
Current race bikes: 1999 Kawasaki ZX-6R, 2000

GSX-R600 Superbike.
Tuner/mechanics: Jake Mashewske, Trent Thompson.
Races/series now competing in: WERA National Sprints, WERA National Endurance, AMA, F-USA.
Sponsors: Applied Business System, Paramount Racing Ltd., City Hill Construction, Performance Cycles, Mom & Dad.
Racing accomplishments (so far): 2000 season, third overall and second in Mediumweight Superbike class WERA National Endurance Series, fourth in WERA 600cc Superstock Championship (three podiums), third in WERA Formula Two Championship (five podiums); 1999 season, WERA North East Regional Sportsman C Superstock and C Superbike Champion and third in Formula One, 10th in 600cc Supersport and sixth in Formula Two WERA National Challenge Series, first in Mediumweight Superbike class (3rd overall) in WERA National Endurance race at Indy Raceway Park; 1998 season, second in WERA Heavyweight Twins Novice Championship, seventh in WERA 125cc GP National Series, WERA Mid-Central Region Formula 2 and Heavyweight Twins Novice Sportsman Champion, second in Mediumweight Superbike class in WERA Endurance Race at Road Atlanta.
2001 racing goals: Win F-USA and WERA Nationals, top 15 in AMA 600cc Supersport events.
Racing career goals beyond 2001: Be Superbike World Champion.
Riding strengths: Starts, riding in the rain, corner exits, braking.
Riding weaknesses: Mid-corner speed.



Barrett Long (142) won the CCS GP Singles Amateur National Championship at Daytona, riding a Yamaha TZ125. Action photo by Lisa Theobald.



Mike Mashewske (92) put in a strong 2000 season riding in the WERA National Endurance Series and National Challenge Series, with regular podium finishes.

Racing heroes: Freddie Spencer, Scott Russell, Jay Springsteen, Chris Carr.
Favorite things about racing: Everything.
Worst things about racing: Crashing, broken equipment.
Favorite track(s): Road Atlanta, Virginia International, Road America.
Hobbies: Working job to pay racing bills.
Training method(s): Working out with weights, riding my XR100.
Favorite foods: Seafood.
Favorite music: Alternative, Rap.
Favorite movie(s): Days of Thunder.
If I weren't racing I would rather be: At the track doing something.

Tony Meiring

Date of birth/age: October 11, 1983/17.
Birthplace: Freemont, California.
Current home: Tracy, California.
Current height/weight: 5'6" / 120 pounds.
Current school/grade: Tracy High School/ 11th.
Began riding at age: 2 years ATV/ 4 years motorcycle.
First motorcycle: Yamaha PW50.
First race bike: Yamaha PW50.
First race (if other than a road race): 1987, Lodi Cycle Bowl, AMA, 50cc Beginner.
First road race: May 1998, Willow Springs, WSMC, Formula Three, Honda RS125.
Current racebike: Honda CBR600F4.
Tuner/mechanics: Dan Kyle, Tony Jimenez, Bob

Meiring.
Races/series now competing in: Formula USA Sport Bike, AMA 600cc Supersport.
Sponsors: Rod Lake, Offbeat Productions, Jimmy Filice, Arai Helmets, Fasttrack Riders.
Racing accomplishments (so far): 2000 season, 15th in F-USA Sport Bike Championship; 1999 season, AMA Dirt Track Horizon Award, 600cc Southeast AMA dirt track Champion, second in WSMC 600cc Modified Production, fourth in WSMC Solo GTU, fourth in AFM Formula Two, race wins at Willow Springs, Thunderhill, and But-tonwillow; 1998 season, two WSMC 500cc Novice wins, consistent top five in WSMC 600cc classes, AMA DTX Champion, third in AMA Amateur National 600cc; 1996 season, AMA District 36 80cc dirt track Champion, AMA Michigan 80cc Modified dirt track Champion.
2001 racing goals: Earn factory road racing ride, win Formula USA Championship, finish top 10 in AMA events.
Racing career goals beyond 2001: Become AMA Champion.
Riding strengths: Sliding the bike, braking, small size, Jimmy Filice's coaching, starts.
Riding weaknesses: Muscling bike through tight sections.
Racing heroes: Ricky Graham, Jimmy Filice.
Favorite things about racing: The speed, getting sideways.
Worst things about racing: Crashing, getting injured.



Tony "The Tiger" Meiring (244) struggled in his first full season aboard a 600cc road racer but still finished 15th in the Formula USA Sport Bike Series. Action photo by Mo Kaluta.



Jonah Miller (73) finished second in the OMRRA 650cc Twins Championship and landed a 2001 ride on an Aprilia RS125. Action photo by Phil Tanner.

Favorite track(s): Daytona, Willow Springs.
 Hobbies: Training, riding.
 Training method(s): Going to the gym, running, motocrossing.
 Favorite foods: Mexican.
 Favorite music: Alternative.
 Favorite movie(s): On Any Sunday, Top Gun.
 If I weren't racing I would rather be: A race mechanic.

Jonah Miller

Date of birth/age: August 18, 1981/19.
 Birthplace: Corvallis, Oregon.
 Current home: Philomath, Oregon.
 Current height/weight: 5'10" / 170 pounds.
 Current school/grade: Lane Community College/ Second Year/ Aviation Technology.
 Began riding at age: 7 years.
 First motorcycle: Honda Z50.
 First race bike: Kawasaki KX250.
 First race (if other than a road race): 1996, Albany, Oregon, motocross, 250cc Beginner.
 First road race: April 1999, OMRRA, Portland International Raceway.
 Current race bikes: 2000 Suzuki SV650.
 Tuner/mechanics: Rich Miller, EDR Performance.
 Races/series now competing in: OMRRA, WMRA, GPRA, Aprilia Cup Challenge.
 Sponsors: Team Veloce, Spiros Gabrielis, Dad, Yoshimura, Lockhart-Phillips, Familian Northwest, Eoff Electric, RG Smith Electric.
 Racing accomplishments (so far): 2000 season, second in OMRRA 650cc Twins Championship, third in WMRA 450cc Superbike, second in first race on 125 behind class Champion; 1999 season, moved to Expert second time on pavement, finished third in first Expert race.
 2001 racing goals: Win 125cc GP in Northwest, finish top five in GPRA, catch a ride on GP bike.
 Racing career goals beyond 2001: To place top-20 in AMA 250cc GP.
 Riding strengths: Dealing with traffic, braking, aggressiveness.
 Riding weaknesses: Bike set-up, getting confidence back after crashes.
 Racing heroes: Kenny Robert Jr., Kenny Roberts Sr., Mick Doohan, Miguel Duhamel.
 Favorite things about racing: The speed, the sounds, adrenaline.
 Worst things about racing: Crashing, the expense.
 Favorite track(s): Road Atlanta, Laguna Seca.
 Hobbies: Dirt riding, mountain bikes, flying airplanes.
 Training method(s): Mountain biking, motocross, running, weights.
 Favorite foods: Prime Rib.
 Favorite music: Tool, Disturbed, Metallica.
 Favorite movie(s): The Matrix.
 If I weren't racing I would rather be: Flying.

Scott Morrison, Jr.

Date of birth/age: November 27, 1984/16.
 Birthplace: Wall Township, New Jersey.
 Current home: Middletown Spring, Vermont.
 Current height/weight: 6'2", 225 pounds.
 Current school/grade: Mill River Union High School/ 10th.
 Began riding at age: 3.
 First motorcycle: Yamaha PW50.
 First race bike: Yamaha PW50.
 First race (if other than a road race): 1987, AMA District 6 motocross, 50cc Modified, 5th.
 First road race: 1996, Frederick, Maryland, EARA, YSR50, 7th.
 Current racebike: 2000 ZX-6R.
 Tuner/mechanics: Scott Morrison, Sr.
 Races/series now competing in: WERA Nationals and Sportsman, CCS/ LRRS.
 Sponsors: Central Vermont Motorcycles, Dad, grandparents, Sullivan Brothers Distributing, Spectro Oil, Vortex, Pit Bull, Silkolene, Michelin,

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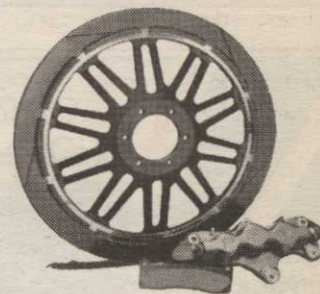


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Young Guns

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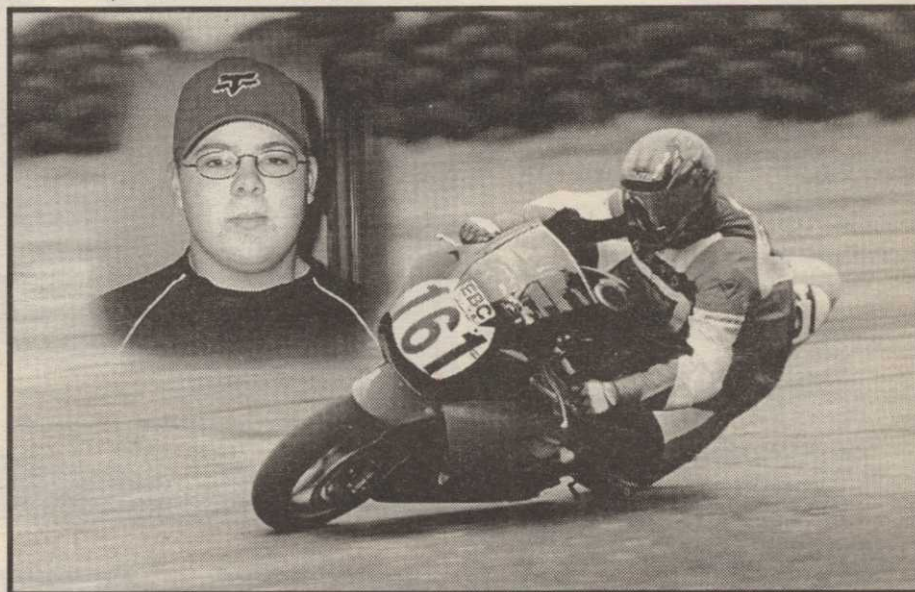
Racing accomplishments (so far): 2000 season, 13th in WERA Mid-Atlantic Region Sportsman B Superbike Championship, several podiums in WERA Sportsman action first year as Expert; 1999 season, sixth in WERA Mid-Atlantic Region Sportsman 600cc Superbike Novice and seventh in 750cc Superbike Novice (2 wins), third in

WERA Sportsman National Championships 600cc Superbike Novice and fifth in 750cc Novice; 1998 season, AMA District 3 125cc flat track Amateur Champion; 1997 season, second in AMA District 3 125cc flat track Championship; 1992-1993 season, 60cc AMA District 6 flat track Amateur Champion.

2001 racing goals: Earn AMA pro license and a ride.

Racing career goals beyond 2001: Make it to AMA Superbike.

Riding strengths: Braking, always push hard, drafting.



Scott Morrison Jr. made it onto the podium in the WERA Sportsman Series in his first year as an Expert. Action photo by Peter Smakula/Motorsports Photo.



Chris Peris (190) won a RACE 125cc GP race at Mosport and finished third in an OMRRA race at Portland and then jumped directly into the Expert ranks with WSMC. Action photo by Photo Girl.



Geoffrey Pestes (383) won Novice races in 1999 and finished eighth in the OMRRA 600cc Superbike Expert Championship in 2000.

Riding weaknesses: Mid-corner speed.
Racing heroes: Kenny Roberts, Sr.
Favorite things about racing: The speed, the adrenaline rush.
Worst things about racing: The cost, fatigue from hard work to get on the track.
Favorite track(s): Road Atlanta, Summit Point.
Hobbies: Snowboarding, hanging out with friends.
Training method(s): Weight lifting, free style biking, jogging.
Favorite foods: Pizza.
Favorite music: Metal.
Favorite movie(s): Ladies' Man.
If I weren't racing I would rather be: Snowboarding.

Chris Peris

Date of Birth/Age: September 30, 1985/15.
Birthplace: Calgary, Alberta, Canada.
Current Home: Calgary, Alberta, Canada.
Current Height/Weight: 5' 4" / 125 lbs.
Current School/Grade: Bowness High School/10th.

Began Riding at Age: 9.
First Motorcycle: PW80 Yamaha.
First Racebike: YSR80 Yamaha.
First Race (If Not a Road Race): Kartgarden, finished 1st of 10.
First Road Race: 2000, Mosport, 125cc GP, finished first.

Current Racebikes: 1995 Honda RS125.
Tuner/Mechanic(s): Fernando Peris (Dad).
Race Series Now Competing In: WSMC and GPRA.

Sponsors: Bikecards.Com/Dad.
Racing Accomplishments (So Far): 2000 season, first in RACE 125cc GP Mosport, third in OMRRA Portland, 12th at GPRA Portland, 17th and 14th at GPRA Willow, second at WSMC November.

2001 Racing Goals: Get lots of track time, and place top 10 in GPRA.

Racing career goals beyond 2001: Be 500cc Grand Prix World Champion.

Riding Strengths: Late braking and starts.

Riding Weaknesses: First year road racing.

Racing Heroes: Nicky Hayden, Mick Doohan.

Favorite Things About Racing: The speed and meeting new people.

Worst Things About Racing: Crashing.

Favorite Track(s): Willow Springs.

Hobbies: Snowboarding, dirt biking.

Training Method(s): Kickboxing, work out in the gym.

Favorite Food(s): Pasta, hamburgers.

Favorite Movie(s): The Matrix.

Favorite music: Rap.

If I weren't racing, I'd rather be: Snowboarding.

Geoff Pestes

Date of birth/age: April 3, 1981/19.

Birthplace: Portland, Oregon.

Current home: Gresham, Oregon.

Current height/weight: 6'3" / 150 pounds.

Current school/grade: Oregon State University/Second Year.

Began riding at age: 12 years.

First motorcycle: Yamaha XT100.

First race bike: Honda CBR600F4.

First road race: June 1998, OMRRA, Portland International Raceway, 600cc Superbike Novice, 2nd.

Current race bikes: 1999 Honda CBR600F4.

Tuner/mechanics: Josh Bryan, Northwest Motorcycles.

Races/series now competing in: OMRRA, AFM, F-USA.

Sponsors: MML Diagnostics, Northwest Motorcycles, Circuit One Suspension.

Racing accomplishments (so far): 2000 season, eighth in OMRRA 600cc Superbike Expert, 15th in OMRRA 600cc Superbike and 17th in OMRRA 600cc Supersport Expert Championships; 1999

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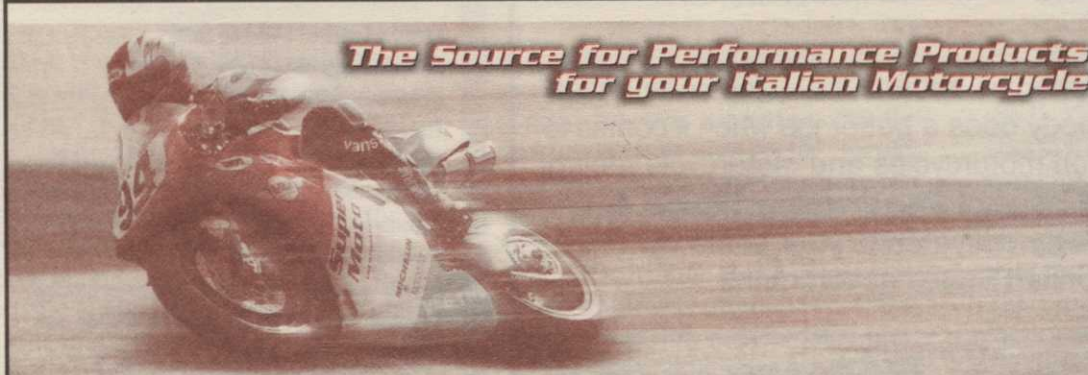
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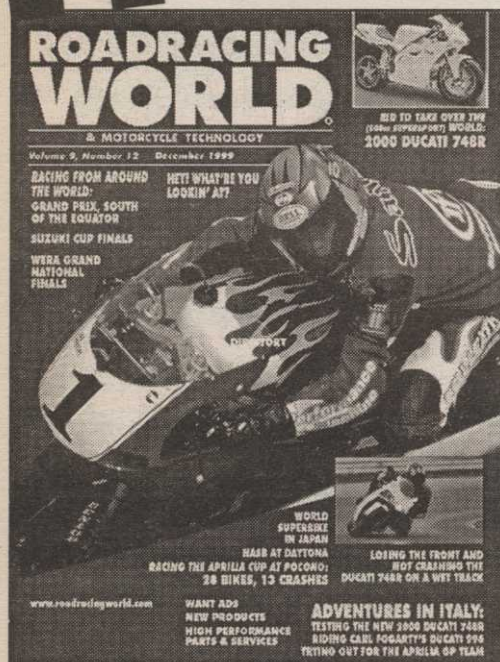
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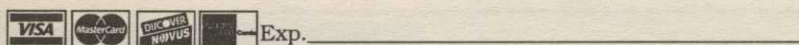
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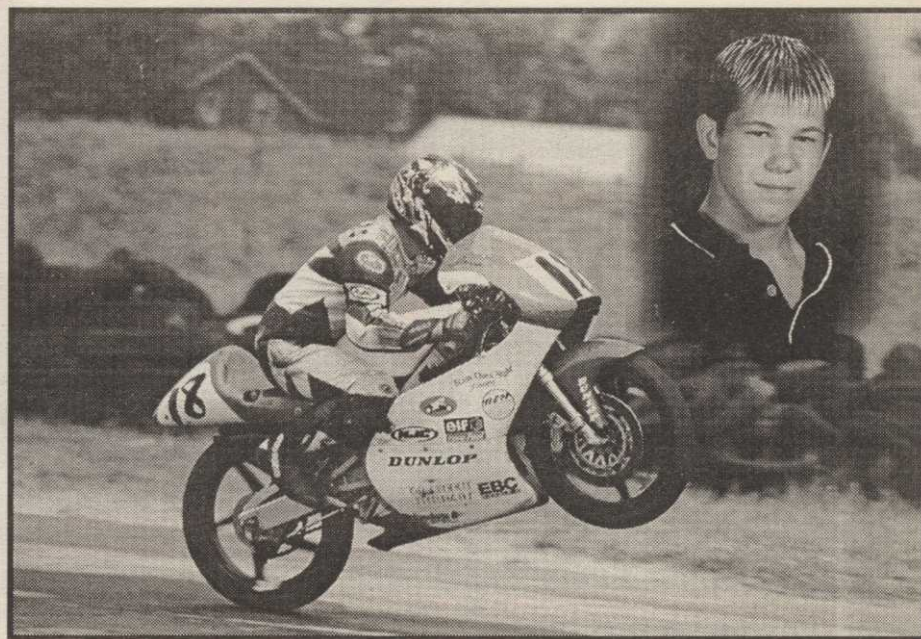
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Young Guns

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season, two OMRR Novice race wins.
2001 racing goals: Run top 10 in F-USA Sport-bike at Portland.
Racing career goals beyond 2001: To race the Isle of Man, AMA Superbike and World Superbike.
Riding strengths: Corner entrances, braking.
Riding weaknesses: Racing in the rain.
Racing heroes: Reg Pridmore, Joey Dunlop,

Riding strengths: Riding in the rain, brakes, cornering speed.
Riding weaknesses: Youth, lack of experience.
Racing heroes: Jason Pridmore, Nicky Hayden.
Favorite things about racing: Going fast, winning, hanging out with people at the track.
Worst things about racing: Crashing.
Favorite track(s): Gateway International Raceway.
Hobbies: Riding dirt bikes, going to school, hanging out with friends.
Training method(s): Go to STAR riding schools, riding XR100s.



Jason Peters (18) won the 2000 WERA 125cc Grand Prix Sportsman National Championship and finished second in the 2000 WERA 125cc Grand Prix National Challenge Championship. Action photo by Lee Rigozzi.

Freddie Spencer, Malcolm Smith.
Favorite things about racing: The speed.
Worst things about racing: Crashing.
Favorite track(s): Laguna Seca.
Hobbies: Paintball, snowboarding.
Training method(s): Riding XR100s.
Favorite foods: Italian.
Favorite music: Offspring.
Favorite movie(s): Halloween series, On Any Sunday.
If I weren't racing I would rather be: On top of a mountain.

Jason Peters

Date of birth/age: September 18, 1984/16.
Birthplace: Indianapolis, Indiana.
Current home: Indianapolis, Indiana.
Current height/weight: 5'3" / 125 pounds.
Current school/grade: Lawrence North High School/ 10th.
Began riding at age: 5 years.
First motorcycle: Yamaha PW50.
First racebike: Honda RS125.
First road race: Sept. 1998, Putnam Park, WERA, Riders' School Mock Race, 1st.
Current racebike: 1998 Honda RS125.
Tuner/mechanics: David Peters (father).
Races/series now competing in: WERA 125cc Grand Prix National Challenge Series.
Sponsors: Outa Sight Racing, Elf, EBC, Grateful Threads, Lockhart-Phillips, Sharkskinz, RK, Dunlop.
Racing accomplishments (so far): 2000 season, WERA 125cc GP Sportsman National Champion, second in WERA 125cc GP National Challenge Series (2 wins), second in GPRA 125cc National Championship; 1999 season, WERA North Central Region Sportsman Champion in Formula Two Novice and Heavyweight Twins Novice, and second in 125cc GP, second in Formula Two Novice race at WERA GNF.
2001 racing goals: Win WERA 125cc GP National Challenge Championship, gain experience on 600.
Racing career goals beyond 2001: Go to the AMA, then the GPs.

Favorite foods: Chinese, Pizza.
Favorite music: Rap and alternative.
Favorite movie(s): Comedies.
If I weren't racing I would rather be: Racing something.

Chris Siebenhaar

Date of Birth/Age: May 25, 1984/ 16.
Birthplace: Hayward, California.
Current Home: Fremont, California.
Current Height/Weight: 5' 11" / 145 pounds.
Current School/Grade: Mission San Jose High School/ 11th.
Began Riding at Age: 4.
First Motorcycle: Yamaha PW50.
First Racebike: Yamaha PW50.
First Race (If other than a road race): 1989, Sand Hill MX Park, 50cc Beginner, 2nd place.
First Road Race: 1994, Prairie City Raceway, NCMRRA, 50cc Stock, 50cc Modified, won both.
Current Racebikes: Honda RS250, CBR600F4i.
Tuner/Mechanic(s): Bob Siebenhaar.
Race Series Now Competing In: AFM, F-USA, AMA.
Sponsors: Hayward Honda, World Sports International, Erion Racing, Dunlop, Arai, Helimot Leathers, Astro Graphics, Silkolene.
Racing Accomplishments (So Far): 2000 season, top-10 finishes in AFM Formula One and AFM Formula Two Expert at Sears Point; 1999 season, several top-15 finishes in AFM Formula Three Expert at Sears Point; 1998 season, 1st and 3rd in WSMC 500cc Novice; 1996 season, finished top three in every NCMRRA race entered; 1995 season, NCMRRA Juniors Champion; 1994 season, several wins NCMRRA Prairie City Raceway.
2001 Racing Goals: Maintain a 3.0 G.P.A. or higher and finish top three in F-USA Sport Bike and top 20 in AMA 600cc Supersport.
Racing Career Goals: Be the next Mick Doohan.
Riding Strengths: Staying upright, learning tracks fast.

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through five and six, it was like, 'Okay, where do you want to go?' I was right behind Chris. Chris would be in the middle of the corner on the Yamaha and he seemed to be struggling to turn the Yamaha in where I could just flick the thing in there. Once it was in, then I could change directions with it, feed the gas on. It just does what you want it to do. The transmission was great, didn't have a problem with it. Transferring from no-throttle to on-the-gas, it's really predictable. It's smooth with like buttery power, just butter."

After riding the YZF-R1 for the first time, Sands again held back nothing, saying, "This is f--king ridiculous! This thing is a f--king pile of shit! Chris could do what he wanted to do (on the Suzuki). Me, I was holding on for dear life just trying to hang with him. It's not about what the Yamaha's not doing. The cornering clearance is horrible on it. I drug something on the left side (case cover). I tucked it one time. I threw it into turn one the same speed Chris was going, the same f--king speed. I threw it in and the front just tucked. It just didn't feel right. I just got on the Yamaha thinking that I could do what I did on that Suzuki, and it wasn't even close. The suspension is probably not set up very well yet because it feels soft compared to the Suzuki. It moves around a little bit more, it's not as solid, it doesn't have the ground clearance. That's a big factor. I've never had that problem with an R1 before. I don't know if it was because I was riding it harder or what."

"It turns in pretty good but it feels heavier than the Suzuki, a lot heavier than the Suzuki. It's a lot harder to flick between four and five. If the Suzuki is a 100, the Yamaha feels like an 800. On the Suzuki, you had to watch yourself mid-corner. On the Yamaha coming out of two, I'm just pinned. Going over six, I'm pinned. Coming out of nine, I just pin it. On the Suzuki, in my head I'm going, 'Don't pin it yet.' On the Yamaha, it's like, 'F--k! Where's it at?' The carburetion feels pretty good up top, but it lags a little bit getting on the throttle. You've gotta preload it a little bit. It's not as bad as the R6 was. It's hard to tell the handling at turn-in and mid-corner because I was dragging the pipe and stuff. It feels like it wants to lean over. When you start pushing, the suspension starts to not work as well and it starts to move around a little bit. The lap-time limiters are ground clearance, lack of power, and soft suspension. The Yamaha's suspension is not right."

"I don't want to ride that Yamaha again," Ulrich said after riding the Suzuki. "It was horrible. The Suzuki just felt so stable and the pegs weren't all stuck into the ground, maybe a little bit. I was dragging them a bit (on the Suzuki). The Suzuki is just so responsive. Under braking and on downshifts, it's so much better. It turns good, it's f--king stable, no problem with anything. It's just fast. It flicks bitchin'. I was braking where the 600s were braking. I guess that's the reason why I over-shot turn one. The Suzuki is pretty

plush. It's nice. It handles really good. The fuel injection is great. The throttle response is bitchin'. The thing is fast. I lined up behind Roland. Even if he got a good drive off of turn six, it was just easy to go by him before turn eight. There was nothing that he could do about it. Ground clearance was big problem on the Yamaha. When I was behind Roland, he was throwing sparks all over the place. I know I was, too. I don't know how the hell he drug that case on the left side, but I know how he did the right footpeg and pipe. He must have put the f--ker up on a curb or something. We were both struggling through two on the Yamaha. Middleweights you can really throw around, these big bikes you have to ride them to not crash them. You can ride them pretty well and pretty hard, but I think there's a really fine line between going good and going on your noggin. That R1 is just a handful."

We let the riders make changes to the bikes before going out for some timed laps. While the Yamaha went for a full stiffening up front and rear, the Suzuki just sat and waited. Neither Sands nor Ulrich asked for any changes to the Suzuki GSX-R1000 from its stock settings!

Ulrich rode the YZF-R1 after the changes and said, "It felt more comfortable, but it doesn't have the power that the other bike has. They made the bike feel more comfortable and turn better. I couldn't get totally comfortable, though. So I wasn't pushing very hard. It wasn't confidence inspiring. I was still dragging the footpegs sometimes."

Sands thought the Yamaha was a completely different bike after the changes on the Yamaha saying, "Yeah, that was way better than it was before. The changes that we did made a huge difference. It's a lot better, but it still doesn't feel as solid. I don't have the confidence to flick it into the corner. And the direction change, I could just feel the weight. I could feel it's quite a bit harder to flick around. That's making a pretty big difference. Before we made the suspension change, this bike wasn't acting very typical of other R1s that I've ridden, but after the suspension change, yeah, it's a typical R1. I had a big f--king slide coming through five. When I'm riding the R1, it's putting me in a different place on the track than I've been all day just trying to carry the kind of speed that I want to carry through there. I don't have the confidence to just throw it in there and scrub off speed with the front tire to get myself way to the inside. So I'm running a little bit wide there and I hit the pavement seam and the thing just slid on me. The rear tire is starting to slide quite a bit now coming out of two and coming out of nine. It's pretty predictable. It just kind of gets sideways and WAAHH you just feed it on. The Suzuki just feels a lot more solid. I have a lot more confidence on

the Suzuki. I think a lot of it has to do with the weight of the bike because the Suzuki's so flickable. I feel like even if I get in hot on the Suzuki, I could just throw it in on the front and trust the front to just pull me through. The Yamaha didn't have the trust."

Ulrich rode the Suzuki for a second time and led Sands around and said, "It just feels more comfortable than the R1. I just couldn't get comfortable riding the R1. It didn't feel all that good. The Suzuki feels pretty good, pretty stable. I like stable bikes. The R1 needs a lot of work. The Suzuki with a couple of changes could get into the 1:25s. We need to maybe put some spring in the rear to keep the rear up or drop the front once. That would be to get it to turn a little better. It's still putting the power down good. It's f--king bitchin'! It took me until Sunday morning at the 24-hour endurance on the 750 before I could do 1:27s. On the 1000, it took me four laps. It took until Sunday morning on another weekend on my 750 before I could do a 1:26 and here I am doing it on the stock 1000. This thing is just so f--king fast! It's going to be a really good endurance bike and Formula Xtreme bike. It's so easy to ride fast."

Sands rode the Suzuki for a second time but actually ended up going the quickest on the Yamaha while chasing Ulrich on the Suzuki. Sands said, "I think the tires on the Suzuki are shredded. That R1 just felt way better after we made the changes. The Suzuki feels a little soft now. I think we could make changes to the Suzuki to make it better. It just feels like the rear tire is really shot on the Suzuki. Coming around two, the thing felt like it wanted to come around on me every time. I was making up hella time on the R1 through there. I was sliding the whole way through two. Chasing Chris probably made a difference."

The power difference between the Suzuki and the Yamaha was also measured at the racetrack. Cruise America Grand Prix Racing's Jason DiSalvo loaned us a Stalker Sport radar gun, which we set up at the end of the front straight. Sands recorded the highest top speed on each bike with a best of 153.4 mph on the YZF-R1 and an incredible 160.1 mph on the GSX-R1000.

When asked for a winner, Sands said, "I would pick the Suzuki 'cause I know that it can definitely be better. We didn't mess with the suspension at all. It's so solid and handles great and that f--king power. Holy shit, the power! I'd definitely take the Suzuki."

Ulrich said, "The GSXR won. When I first got on the R1 it was really crappy. The second time I got on it, it was good and I tried to push reasonably hard. It just didn't come together for me. I got on the 1000, and the thing just seemed to be effortless, and felt more comfortable, and I went faster. I like the power of the 1000

Suzuki. It's bad ass! If you want, you can light it up and it's still pretty tractable. It's good fun. I like the feel of the front. I like the stability of the chassis, especially through turns two and eight. The ergonomics of the bike are good. The pegs don't stick into the ground, just a little bit. The bar position is good, too. I don't know if I mentioned the power yet, but the power. There's nothing like bad-ass horsepower like that thing has. It's so linear and tractable. It's not violent or f--ked-up."

What Lost Overall, And Why

The GSX-R600 was close but lost because it moved around a bit much on the track and was the least comfortable on the street. The Honda came in a distant third because it is a street-bike pitted against racebikes, and it didn't even dominate the street. The CBR600F4i does many things well, but not many at 99 percent on the track.

The YZF-R1 has been leapfrogged. It is not a bad bike. The Suzuki GSX-R1000 just does everything as well, if not better. In terms of horsepower, there is no contest. Out of the box, the Yamaha was behind at the track due to poor suspension settings and even worse ground clearance. The Yamaha got better with tweaking, but it would take a lot of work for the YZF-R1 to come close to the Suzuki's power.

What Won Overall, And Why

The YZF-R6 won the 600cc race-track shootout despite a carburetion glitch. The little Yamaha owes its success to a light, compact feel and stable handling that inspire rider confidence and the knowledge that he is controlling the bike. Each of our testers did their fastest 600cc lap on the Yamaha. The Suzuki drew high praise for its fuel injection and power as well as handling, but its wide tank made Sands and Sorbo feel uncomfortable as did the way the bike moved around when ridden hard. Larger Chris Ulrich did not find the tank to be intrusive. So the winner of this test could have been different if we had two bigger testers instead of two smaller guys.

The Suzuki GSX-R1000 won not only for its incredible motor, but more for its overall package. Its incredible motor is matched by great brakes and a great-handling chassis. This bike truly makes the dream come true: A big motor in a small bike.

On the racetrack in 2001, the Yamaha YZF-R6 and the Suzuki GSX-R600 are going to be fierce rivals in the hands of mortal men. Anybody who can compete on a Honda or a Kawasaki deserves respect, both for his riding and for his team's technical skill and rules-interpreting ability. But with these riders, on this track, on this day, the advantage goes to the Yamaha YZF-R6.

For the big bikes, there is no contest. If two riders of equal skill are competing on the Yamaha YZF-R1 and the Suzuki GSX-R1000, the Suzuki is going to win—unless the race is on a track that's so tight, or under conditions that are so bad, that the rider is afraid to open up the throttle and unleash the horsepower. With these riders, on this track, on this day, the advantage goes to the Suzuki GSX-R1000. **RW**

Riders	Best Lap times				
	CBR600F4i	YZF-R6	GSX-R600	YZF-R1	GSX-R1000
Roland Sands	1:29.82	1:27.36	1:27.68	1:26.57	1:26.67
Chris Ulrich	1:31.26	1:28.45	1:28.76	1:29.33	1:26.64
Ed Sorbo	1:34.55	1:34.21	1:34.47		

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incredulously. "Uh, yeah" I said and handed him my lazer printed speaking points and then studiously tried to ignore him while he read them.

To keep track of all the various events during the race I had brought a laptop computer and a printer so I could revise pit schedules, rider schedules, race maintenance, tires, etc. as the race progressed. That way anyone could look at the last printed schedule and figure out where they needed to be at any given time. Although efficient, I was a little concerned that such technological overkill might appear a little candy-assed to a grizzled endurance team captain such as Mr. Ulrich.

In a commendation that meant more to me than winning some races Ulrich handed my notes back to me and said "That's a f--king awesome speech. Those computer schedules are a great way to do it. When you are done with those notes I want to take them because I am supposed to deliver the same speech over at the Vesrah pits."

24-hour races have a fair amount of romance. The first manifestation of this festive spirit is the night practice when the realization that this race is actually going to involve racing at night permeates the pits. The sun set. The headlights were turned on. Everyone got giddy.

Scott Fisher had decided that, since AOD's use of HID headlights in 1999 was going to be extensively emulated for 2000 (which it was) our pits needed something else to lend a little pizzazz. That something was a black-light-sensitive pit board which glowed a brilliant green at the leading edge of the pits.

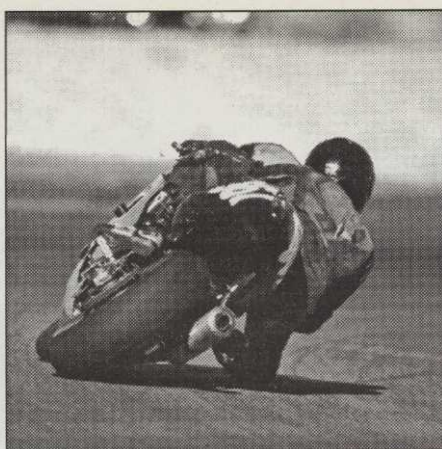
The pit board worked great, the headlights worked great. We traded off riding around until the fatigue factor was greater than the excitement factor. We collectively went back to the hotel, and bed, around midnight, and 7:30 a.m. arrived with depressing swiftness.

The day was already hot by 9:30 a.m. and by 10:00 a.m. it was obvious that the temperatures were going to cause serious tire wear problems. We practiced a little bit but mainly just worked on prepping the bikes until the high-noon green flag.

Figuring that it would be nice to get out front early on, we started Ben Spies. He demonstrated his considerable talent when he quickly put a lead on the class competition and demonstrated maturity when he gave it back as the rear tire dissolved in the heat. Although we never checked, the rumor in the pits was that the 110 degree air meant 180-degree track temperatures. Last year our rear tires were lasting three hours. This year, a reduction in estimated tire life to one hour meant it was going to be an expensive race.

Our dismay at the poor life of our Michelin slicks was nothing compared to the considerable ire of a few Dunlop-shod riders whose tires catastrophically failed in turn eight with complete tread separation and resulting high-speed crash in both cases.

Melissa had started the race for NOTB but had still not arrived at workable suspension settings. A combination of stiff damping settings and



Melissa enters turn two with a broken heart. Photo by Brian J. Nelson.

couple of fitment and clearance difficulties, effectively removed NOTB from contention for the Mediumweight Superstock class win.

AOD, however, was enjoying a pleasantly uneventful race. Through quick riding and flawless pit stops we had managed to work our way into third place overall. I was out on the bike for my first night stint, almost enjoying the ambiance. The moon was rising in the east, the sun setting in the west, the pit board showing consistent times and the temperature beginning its descent into the night.

The fabled Willow wind was only gusting slightly. A couple of times I felt like the wind had caught the FAI ducts



AOD and NOTB, in a burst of existentialist exuberance, gather in a self-made winner's circle to reflect upon the day's events. Photo by Brian J. Nelson.



Sausage, legislation and calendar photo shoots... three things that you never want to watch be produced. AOD Ministry Of Information.

a rapidly decaying rear tire resulted in her second crash of the weekend and season. Unfortunately this crash proved the durability of the Graves rearsets by breaking the mounting points off the frame instead. Her teammate for the weekend Kevin Perkins (from VCR) instantly volunteered the use of his 1997 GSX-R600, which we had toted to the track as a practice bike. Eight or so of us started pulling various parts off of Melissa's destroyed motorcycles (lights, fuel tank, etc.) and bolting them onto Kevin's bike. It was a slow, tedious and painful process that, due to a

on the fairing with enough force to cause the engine to stumble. Then it seemed to happen more often. Then the engine stopped revving over 12,000 rpm.

It felt all too familiar. The dreaded broken Suzuki valve spring retainer.

Did you know that "Oh F--k" has replaced "Oh Shit" as the most common words spoken at the end of crashing airplane black box recordings?

It was ill-advised but I kept completing laps. I knew the engine was going to fail, possibly breaking the valve and piston, but I also knew that as soon as I pulled into the pits our class lead, and our chance for class victory in the

race, would evaporate into the desert air.

Three laps of steadily slower times persuaded me to pull into the pits. I yelled at Tim to prepare the spare motor and took off to complete two more laps while the crew got ready.

After five years of endurance racing we were finally going to have to change motors under a green flag. My predominant thought was of all the other teams we have watched perform speedy motor swaps mid-race only to have the bike break shortly thereafter. It is a very difficult task to get it right.

With about eight of us working on the project it took us about 40 minutes to change engines. Not fast, but, as it turns out, we got it right the first time and did not have to make additional pit stops to tweak, tune or tighten. The crowd that had gathered to watch our struggle cheered when we finally lit it up.

I was pretty tired from the stresses of the moment and sort of gutted that we were going to have the victory taken from us from a manufacturing/design problem on Suzuki's part. I slunk off to the back of the van for some fitful rest and waited for the arrival of more bad news.

Apparently we had paid our dues early in the race as our only other error was the forced repetition of a pit stop when a neophyte crewmember didn't quite get the rear axle tight the first time.

Dawn arrived and found us gaining on our chief rival Paramount Racing but not at a rate that was going to be meaningful before the race would end. Seeing my despondent body posture Tim cheered me up by pointing out that Paramount uses the same valve spring retainers we do.

With two-and-a-half hours left in the race a crew member working the wall came over to announce that the Paramount GSX-R600 was losing power on the front straight and making a bad mechanical noise. If nothing else, Suzuki's quality control is consistent.

The race was going to be won (actually a Yamaha was going to win it but since the team fielding the Yamaha was only running this race neither Paramount nor AOD particularly cared how the Yamaha did since it would not ultimately play any part in the contest for the 2000 class Championship) not on the track, but by whichever team could more effectively change the engine in a GSX-R600. Paramount performed the task faster than we did but by the time they had rejoined the fray we had put about 10 laps on them on the track. And, in a manifestation of my fears, they had to pit a couple of times to make adjustments before a wiring connector pulled apart on the far side of the track, stranding both bike and rider.

As we did last year, we secured the 2000 WERA National Endurance Series Mediumweight Superbike Championship at the 24-hour. We celebrated with a burn-out, a group photo, and dinner at a local Italian establishment.

In a contrast of the sublime to the ridiculous, I flew straight from the 24-hour to Chicago to deliver a talk about Medicare payment policy. I dodged the inevitable "Did you have a nice weekend?" **RW**

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public announcement would be made "very soon". In the meantime, Michelin riders at the January 20-21 WSMC event were out of luck because there was no Michelin race tire sales and service operation present at the Rosamond, California track. Several long-time Michelin riders defected on the spot Pirelli/Metzeler, and many others bought Dunlops at the racetrack.

According to former racer Dennis Smith of Sport Tire Services, Dunlop's grid fitment at the January 2001 WSMC race shot up to a record 71 percent, up from 54 percent at the same race last year. Smith said that his sales at the track set a new record for his company at a WSMC club event, by a margin of 33 percent. California Race Services' Metzeler/Pirelli sales also hit a record, up 15 percent.

Lockhart-Phillips laid off Motorsports Manager Morgan Broadhead on January 15 and discontinued its at-track race support and product sales program. Broadhead, who has worked for the company for two years, was in charge of the company's at-track sales as well as its popular Team Privateer program, which offered varying levels of sponsorship support to over 900 racers in the U.S., Canada, Mexico and Australia. Lockhart-Phillips will no longer sell products at races, according to Broadhead, who can be contacted at (949)500-8695. "We will still be running the privateer program but we're changing it internally," said Lockhart-Phillips President Wendall Phillips when asked to comment on the move.

Max McAllister's Traxxion Dynamics has moved to 480 Mondri Dr., Woodstock, GA 30188, www.traxxion.com, info@traxxion.com.

Steve Scheibe resigned from his post as Technical Director of the Harley-Davidson VR1000 racing program effective January 22, ending a seven-year run in charge of the most unsuccessful factory team in AMA Superbike racing. Frustrated by the lack of results realized by the program, Harley-Davidson executives recently assigned an in-house technical task force to the VR project and put John Baker in charge of overall program management. Former racer Erik Buell, who originally laid out the VR1000 engine and worked on the project in 1987-1991, is now a consultant on the project, and some senior Buell Motorcycle Co. engineers with racing experience are also involved. Prior to his resignation, Scheibe made a presentation to senior Harley-Davidson managers in which he stated that riders cannot be listened to and that the only reliable indicators of VR1000 performance were data acquisition readouts and Scheibe's own personal test rides on the machine. Scheibe, a mechanical engineer, was a club racer prior to taking over the VR1000 project through Gemini Technology Systems, Inc., a company contracted to run the VR1000 program for Harley-Davidson. Scheibe was involved in the founding of Gemini Technology Systems with a college roommate, but it is unknown if he has or had any direct financial involvement in the firm. *Roadracing World* was unable to contact Scheibe for comment prior to presstime and Harley-Davidson

continued on page 67



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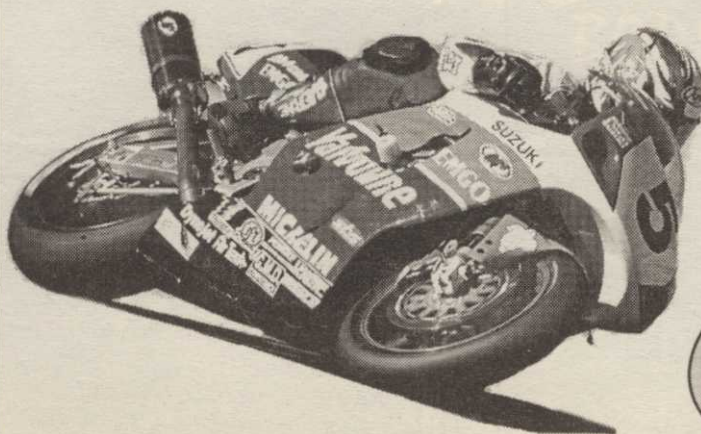
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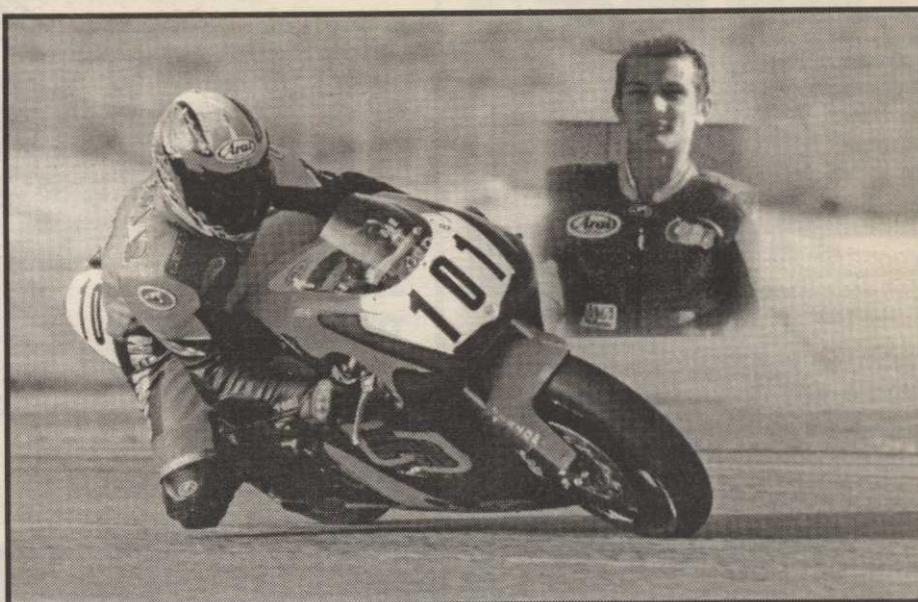
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Young Guns

continued from page 44

snowboarding, surfing, and wake boarding.
Training Method(s): Running, weight training,
motocross, and mountain biking.
Favorite Food(s): Italian.



Chris Siebenhaar (101) won in the Novice ranks on a Honda RS125 and has run top-10 in AFM Expert competition on a Honda RS250. Action photo by Garry Rather.

Riding Weaknesses: Too tentative around lappers,
giving feedback.

Racing Heroes: Kenny Roberts, Sr., Ben Bostrom.

Favorite Things About Racing: Having fun, going
fast, and meeting new people.

Worst Things About Racing: Getting hurt and
having to retire early.

Favorite Track(s): Laguna Seca, Thunderhill.

Hobbies: Motocross, mountain biking, BMX,

Favorite Movie(s): The Shawshank Redemption.

Favorite Type of Music/Band: Alternative.

If I weren't racing, I'd rather be: Riding motocross.

Ben Spies

Date of birth/age: July 11, 1984/ 16.

Birthplace: Memphis, Tennessee.

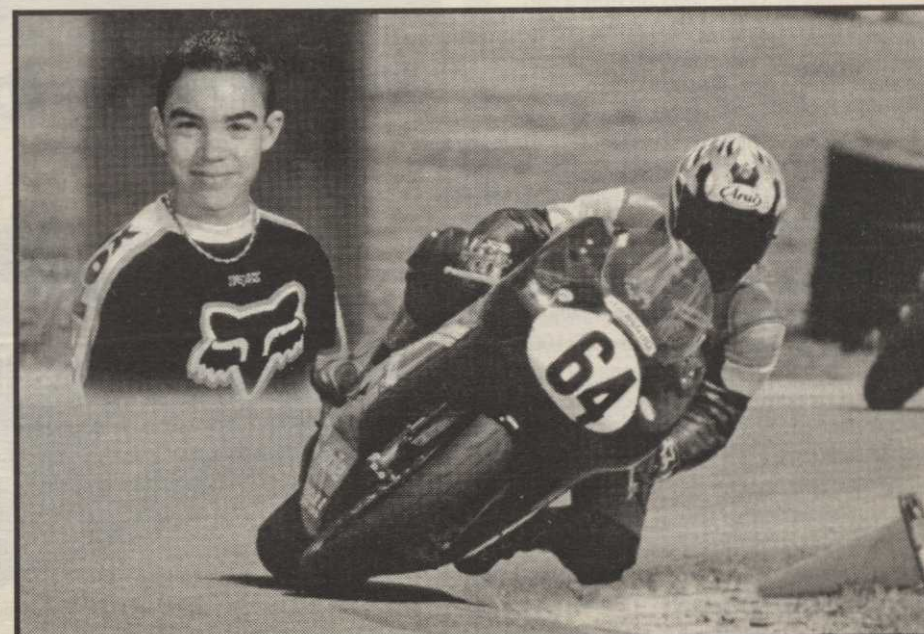
Current home: Longview, Texas.

Current height/weight: 5'10" / 145 pounds.



Ben Spies (3) won the 2000 AMA Road Racing Horizon Award, won a Formula USA Sport Bike race at Portland, and finished second in the Suzuki GSX-R600 Cup Final.

Photos by Brian J. Nelson.



Cory West (64) finished third in the Formula USA Aprilia Cup Challenge race at Daytona in October, 2000. Action photo by Lee Rigozzi

Current school/grade: University of Texas Home School/ 11th.

Began riding at age: 5 years.

First motorcycle: Yamaha PW50.

First race bike: Yamaha YSR50.

First race (if other than a road race): 1992, motocross, Honda XR80, Jacksonville, Texas.

First road race: 1993, Oak Hill Raceway, CMRA Production 50cc class.

Current racebikes: 2001 GSX-R600, 2001 GSX-R750.

Tuner/mechanics: Shane Clarke, Keith Perry.

Races/series now competing in: F-USA, AMA.

Sponsors: Valvoline, EMGO, Suzuki, Michelin, M4 Exhausts, SBS, Arai, Dynojet, Tsubaki, Lockhart-Phillips, Penske, Street & Competition, GMD Computrack, Air-Tech, Kushitani, Performance Machine, Wiseco, Graves, Sprocket Specialists, Traxxion Dynamics, Team Hammer Advanced Riding School, and Red Bull Energy Drink.

Racing accomplishments (so far): 2000 season, won AMA Road Racing Horizon Award, won three AMA National Amateur Championships, third in F-USA Sport Bike Championship (1st Portland, 2nd Pocono), 10th in F-USA Unlimited Superbike Championship (competing in six of 12 races), 9th in AMA 750cc Supersport Championship (competing in four races), second in Suzuki GSX-R600 Cup Final, fourth in Suzuki GSX-R750 Cup Final, won WERA Formula Two race at Road Atlanta; 1999 season, WERA Formula Two National Challenge Champion (youngest National Challenge Champion in WERA history), second in WERA 125cc GP, second in Suzuki GSX-R600 Cup Final, won Aprilia Cup Challenge race at Texas World, finished second in Aprilia Cup Challenge race at Pocono, perfect 9-for-9 race wins with CMRA, finished first in Mediumweight Superbike class (3rd overall) in WERA National Endurance Race at Indy Raceway Park. **2001 racing goals:** Win Championships and break track records.

Racing career goals beyond 2001: Be the winningest AMA Superbike rider ever.

Riding strengths: Late braking, aggressiveness.

Riding weaknesses: Looking back, riding the learning curve.

Racing heroes: Colin Edwards II, Valentino Rossi, Kevin Schwantz, Mick Doohan.

Favorite things about racing: A race-long dogfight, winning.

Worst things about racing: Crashing, people who don't hold their line on the banking.

Favorite track(s): Road Atlanta, Mid-Ohio.

Hobbies: Motocross, basketball, riding XR100s on my TT course.

Training method(s): Motocross, going to the gym.

Favorite foods: American.

Favorite music: Led Zeppelin, Pennywise, Limp Bizkit.

Favorite movie(s): For the Love of the Game.

If I weren't racing I would rather be: Hunting.

Cory West

Date of birth/age: August 23, 1984/16.

Birthplace: Oklahoma City, Oklahoma.

Current home: Eureka Springs, Arkansas.

Current height/weight: 5'9"/140 pounds.

Current school/grade: Eureka Springs High School/ 11th.

Began riding at age: 4.

First motorcycle: Yamaha PW50.

First race bike: Yamaha PW50.

First race (if other than a road race): 1999, flat track, Tulsa, Oklahoma, 1989, 4th.

First road race: 1999, Hallett, Oklahoma, Provisional Novice Lightweight, Honda CR250, 1st.

Current racebikes: Suzuki SV650, Aprilia RS250, Honda RS125, Yamaha YZF-R1.

Tuner/mechanics: Marvin West, Bart Winters.

Races/series now competing in: CMRA/CCS, F-USA, RPM/WERA.

continued on page 52

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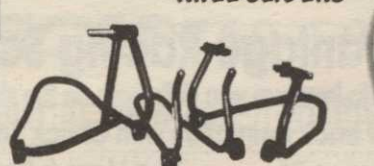
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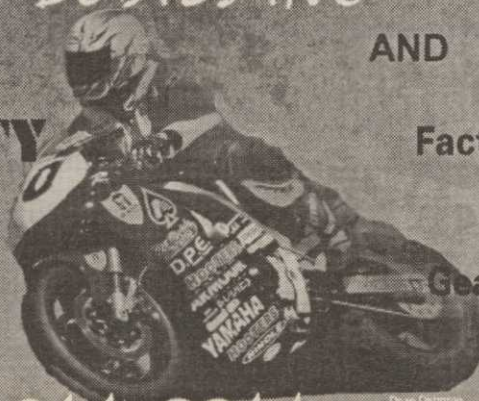
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Racing accomplishments (so far): 2000 season, finished third in F-USA Aprilia Cup Challenge race at Daytona, WERA South Central Region/RPM Sportsman Lightweight 50-miler, D Superbike and Lightweight Twins Expert Champion (7 race wins); AMA 125cc Amateur National Short Track Champion, finished third in AMA 125cc Modified Amateur National Championships; 1999 season, finished seventh in Aprilia Cup Challenge race at Texas World Speedway.

2001 racing goals: Run AMA 250cc GP and see what I can do.

Racing career goals beyond 2001: Win 500cc GP World Championship.

Riding strengths: Braking, corner speed.

Riding weaknesses: Worry about tires too much, too tentative.

Racing heroes: Colin Edwards II, Valentino Rossi.

Favorite things about racing: The adrenaline rush, getting out to do something different.

Worst things about racing: Crashing, tearing up and having to fix motorcycles.

Favorite track(s): Road Atlanta, Daytona.

Hobbies: Ride unicycles, ride XR100, hanging out with friends.

Training method(s): Weight training class at school, trail riding, riding on the street.

Favorite foods: Mexican, spicy stuff.

Favorite music: Alternative.

Favorite movie(s): The Matrix, Fight Club.

If I weren't racing I would rather be: A test rider for a motorcycle magazine.



Nicky Wimbauer, a German immigrant, won the MRA Formula 3 Championship in 2000. Action photo by John Weiland.

Nicky Wimbauer

Date of birth/age: February 24, 1988/ 12.

Birthplace: Straubing, Germany.

Current home: Elizabeth, Colorado.

Current height/weight: 4'10" / 102.

Current school/grade: Elizabeth Middle School/ 7th.

Began riding at age: 7.

First motorcycle: KTM 50.

First race bike: KTM 50.

First Race (if other than a road race): 1996, mini Motocross, Pueblo, Colorado, 3rd.

First road race: 1999, CMRA, Heartland Park,

Kansas, Lightweight Mini Novice, 1st.

Current racebike: Honda RS125.

Tuner/mechanics: Sil Trujillo.

Races/series now competing in: MRA, CMRA/CCS.

Sponsors: Info Tech Racing, Bridgestone, Grand Prix Motorsports, Yuckmonkey Graphics.

Racing accomplishments (so far): 2000 season, MRA Formula 3 Champion, third in MRA Formula Colorado Championship; 1999 season, Colorado State 60cc & 80cc Short Track Champion, Colorado Winter Hare Scramble winner, 1st overall in CMRA 2-hour Mini Endurance race at Texas World Speedway, won every CMRA Lightweight Mini Novice race entered, won VDTRA 60cc, 80cc, and 125cc dirt tracks on KX60.

2001 racing goals: Win more Championships with MRA, finish top five in GPRA races, get a top-three result on a four-stroke (SV650).

Racing career goals beyond 2001: Stand on the podium of a World GP event.

Riding strengths: Consistency, apex speed, and sliding.

Riding weaknesses: First laps, exit speed.

Racing heroes: Valentino Rossi, Noriyuki Haga, Joey Dunlop, and Garry McCoy.

Favorite things about racing: Speed, smoothness, passing people.

Worst things about racing: Not finding that extra second, mechanical DNFs.

Favorite track(s): Pikes Peak.

Hobbies: Mountain biking, playing Playstation, watching Speedvision, building jumps for dirt bike.

Training method(s): Dirt biking, trampoline jumping, snow boarding.

Favorite foods: Schnitzel.

Favorite music: Heavy metal.

Favorite movie(s): Days of Thunder.

If I weren't racing I would rather be: Designing racebikes.

Logan Young

Date of birth/age: September 21, 1983/17.

Birthplace: Houston, Texas.

Current home: Houston, Texas.

Current height/weight: 6' / 155 pounds.

Current school/grade: High School for the Performing & Visual Arts/ 11th.

Began riding at age: 10.

First motorcycle: Suzuki DS80.

First racebike: Yamaha YSR50.

First road race: 1996 Texas Mini GP, Katy, Texas.

Current racebikes: 1994 Honda RS125, YSR50, RS125/80, 1994 CBR600F2.

Tuner/mechanics: Bob Young (Dad).

Races/series now competing in: CMRA/CCS, RPM/WERA.

Sponsors: My parents, ARI knee sliders, slider-woman.com, Michelin.

Racing accomplishments (so far): 2000 season, finished second in CMRA Heavyweight Mini Championship (1 win), third in CMRA Endurance Series Unlimited Supersport class (1 class win), fourth in CMRA GT Lights Championship (2 podiums); 1999 season, several podium finishes in Mini Endurance series.

2001 racing goals: Graduate high school, race new tracks, do some AMA races.

Racing career goals beyond 2001: Race in Europe.

Riding strengths: Braking, mid-corner speed.

Riding weaknesses: Corner exits, rain.

Racing heroes: Kevin Schwantz, Colin Edwards II.

Favorite things about racing: Meeting new people, the speed, gaining experience.

Worst things about racing: Crashing, breaking bikes.

Favorite track(s): Daytona.

Hobbies: Playing french horn in my school band, riding my XR100.

Training method(s): Running, riding XR100s, racing YSR50s, and lifting weights.

Favorite foods: Chicken fried steak.

Favorite music: Alternative rock.

Favorite movie(s): Adam Sandler movies.

If I weren't racing I would rather be: Spectating at the races.

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Logan Young (35) had four CMRA podium finishes in 2000, including co-riding to an Unlimited Supersport class endurance win.

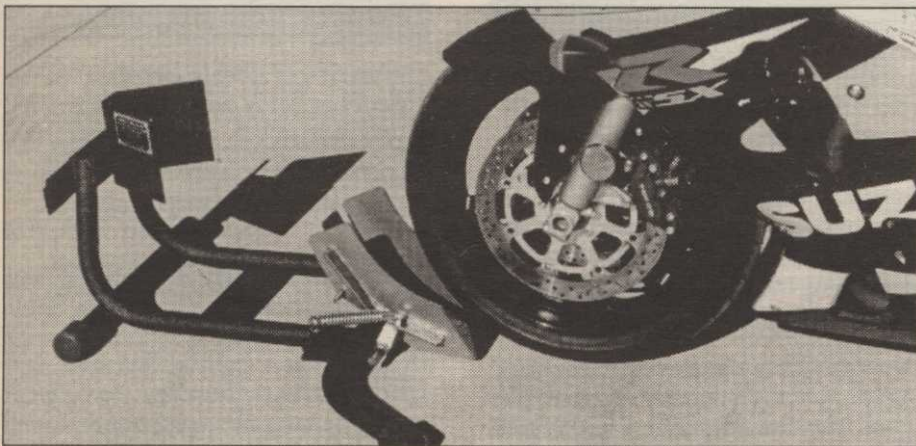
Product Evaluation

Racers with teams almost always have somebody back in the pits to hand their bike to after a race or practice session. But many riders have to dismount the bike, then fumble around trying to place a race stand in its proper place to support the bike. This is often a good time and place to learn new and exciting curse words or to have a supply of brake and clutch levers for sale.

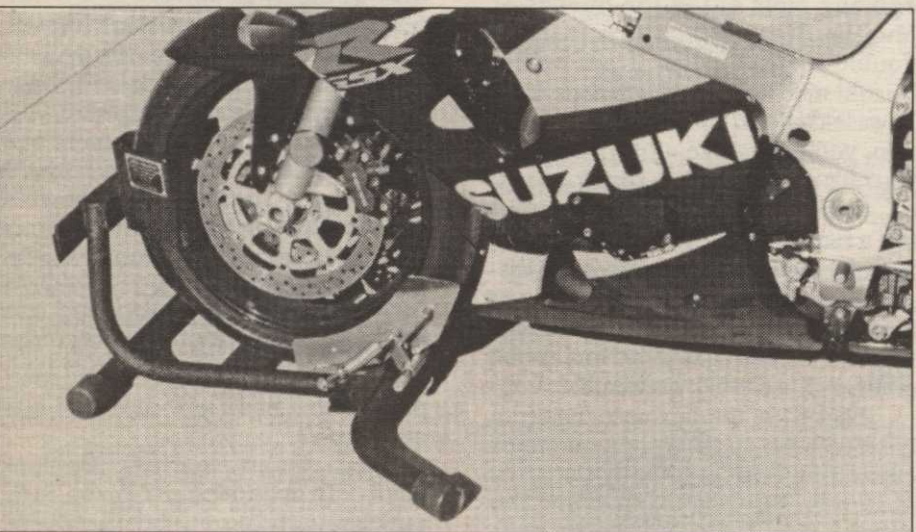
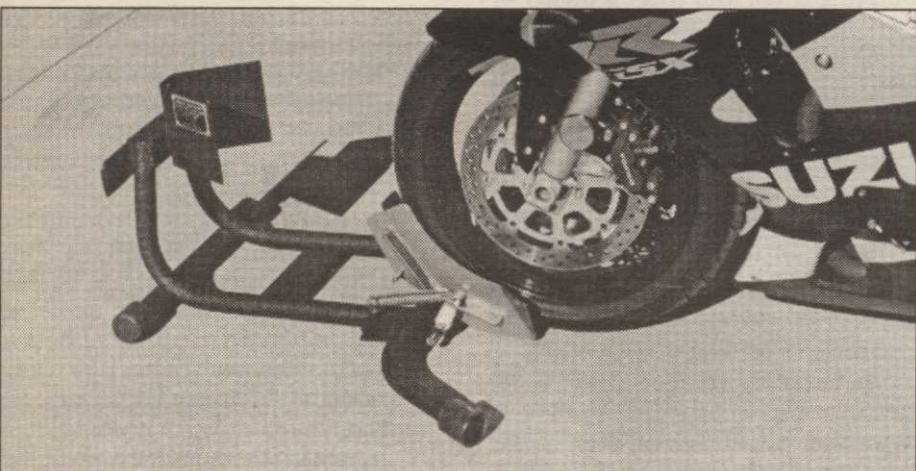
Understaffed racers, then, will appreciate the L.A. Chock. Made mostly of tubu-

at the four corners of the Chock keeps it stationary with the added pressure of the tie-downs. And because the Chock clamps on the front wheel, preventing it from turning, tie-downs don't need to be pulled so tight that the suspension is bottomed out. Instead, the makers of the L.A. Chock recommend that the bike be lashed down from points near the rear of the motorcycle.

The L.A. Chock's design also makes transporting bikes in a van a much more secure proposition. And the stand has three mounting holes drilled into it (two on the upper cross plate, one on the bottom cross plate) for solid mounting in trailers. Over-



Using the L.A. Chock is easy—just roll the front wheel up and on, and spring-loaded side plates grab the front wheel. The bike comes back out of the chock with a backwards tug on the bars.



lar steel, the patented device sits at the ready in the pits. An exhausted (or not) racer returning from the track simply rides his bike into the gizmo where its capture mechanism automatically clamps the wheel in place. Without further fuss, the rider is free to dismount from his secure machine.

It is a simple yet remarkably efficient gadget, and one not limited to just a single purpose. Aside from being able to accommodate virtually any size front tire, the L.A. Chock can be adjusted to fit up to a 200mm rear tire if you prefer backin' 'er in.

The L.A. Chock also proved useful for transporting motorcycles. The stand only needs to be placed against the front of a pickup's bed before strapping a bike in place with tie-downs. Non-slip rubber caps

all, it measures 16 inches high, 32 inches long and 35 inches wide.

It was easy to like the L.A. Chock for its utility, but we were also impressed with its sturdy construction (it weighs a road-hugging 45 pounds) and the durable-looking black crinkle powder coating. The only downside is the stand's somewhat high \$275 price tag, not including shipping and handling. However, if you don't cringe at the price, the L.A. Chock's build quality, versatility and convenience will likely satisfy for years to come. And it'll put you one step ahead in the paddock's gadget wars.

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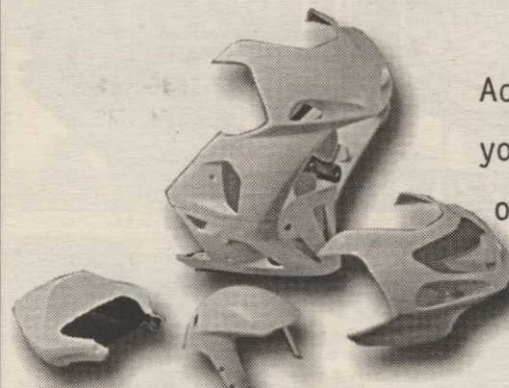
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FIRST PERSON/ OPINION:

gp mutterings

By Mat Oxley

The 2001 500cc World Championship is going to be mondo weirdo. After 52 years of 500cc GPs, it's the last 500cc season ever, because from 2002 there'll be big, hairy 1000cc four-strokes racing the identikit 500cc V-4 two-strokes.

That in itself is a wild prospect, but things are going to be strange during 2001, when all the factories will be battling to win the 500cc crown, as usual, while working their butts off developing their four-stroke prototypes (no, they're not based on streetbikes) in secrecy.

The new regulations allow for anything up to six-cylinder engines, and since we're dealing with a whole new ballgame here, no one knows what will be the ideal four-stroke GP motor. Honda—the king of four-stroke know-how—has pretty much confirmed it's building a V5, and there's plenty of dodgy rumors flying around about the other factories, like Yamaha testing a 1000 V-4 that has already whipped its own YZR500.

All these tests will be conducted in total secrecy, since you don't want some spy from a rival factory clocking your new creation, finding it's mega-quick, and then rushing back to base and copying the thing. But keeping an entire track venue secure from spies nestling in the undergrowth with long lenses ain't easy. For sure there's going to be plenty of inter-factory espionage going down, and maybe the odd fistfight as Honda security men dig a Yamaha mole out of the bushes at Mugello. Maybe even the occasional double agent; I mean, if you were a Suzuki mechanic, and someone from Kawasaki offered you \$50,000 for some info, you'd sing like a bird, wouldn't you? It's going to be entertaining stuff.

In fact, it's all starting to sound like a remake of the 1960s, GP racing's most fabulously glorious era, or so witnesses would have you believe (if you forget all the deaths as riders smacked into brick walls and other street-circuit furniture every weekend).

Back then, the Japanese engineers must've been on some serious mind-expanding gear, especially the guys at Honda. Battling to overcome the growing two-stroke threat, they built some truly ridiculous racebikes: A twin-cylinder 50, a five-cylinder 125 and a six-cylinder 250. When Honda developed the 250 Six in 1964, design and build took less than six months from scratch. It was created to see off Yamaha's two-stroke Twin, and Honda was so desperate to keep the thing secret that it was shipped to Europe with only four pipes attached (Honda was racing a Four at the time). And it stayed like that at Monza, until moments before the first practice session, when mechanics fired it up, like they'd flung open the gates of hell. Of course, they didn't have sissy silencers in those days.



"So you've got to feel a bit concerned for the riders, because if the engines ain't nice and smooth, they're going to be highways to highside hell." Photo by Yves Jarnotte/Sports Photography.

But surprisingly, it was the 50 that was technically the most remarkable of the bunch. Honda engineers used the thing as a rolling test bed, and much of the technology they developed was later incorporated into road engines. Code-named the RC116, this puniest of racebikes had bores just 35mm wide, a miniscule stroke of 29mm and pistons that would fit in an espresso cup. The little bastard revved to 22,500 rpm, squeaked out a whole 14 horsepower (that's a whacking 280 bhp per liter, which was rocket science in 1966) and needed a nine-speed gearbox to keep those pygmy pistons rattling up and down within the 1000-rpm-wide powerband.

Honda's first 50 in 1962 had six gears, and when the bike got thrashed first time out, rider Tommy Robb was hauled in front of his team manager to explain himself. He told the Honda man he needed more gears. How many gears would Robb-san like? Eight, he replied.

A week later, he turned up at the next GP and was amazed to find two new 50s, with eight-speed gearboxes. But he still got his ass kicked, so there was another debrief. More gears, please. How many Robb-san? Ten, please. Less than three weeks later, two more new bikes arrived, with 10-speed boxes.

Oh yeah, and Honda engineers were so obsessed with reducing drag that a bicycle-style front brake was fitted. The 116 could crack 110 mph but most 1960s tracks were crazy fast, like Spa, where Robb only needed the 116's brakes once a lap, at la Source hairpin, and that was a nine-mile lap. Crazy stuff, huh?

Tech regs are more restrictive these days—six cylinders, six gears, fuel-tank limits and so on—but there's still going to be plenty of rapid-response engineering going on in 2001, as spies uncover rivals' secrets.

Depending on who you believe, these motors are going to be pumping out big horsepower, up to 250. So you've got to feel a bit concerned for the riders, because if the engines ain't nice and smooth, they're going to be highways to highside hell. Not only that, guys like Valentino Rossi and Kenny Roberts will spend most of 2001 in jetlag hell, shuttling from Europe to Japan and back again, racing one day, testing their factory's latest four-stroke rocketship the next. Don't envy their jobs much. And I mean it. **RW**

Advice From The Pros

Compiled By David Swarts

WHAT IS THE ONE PIECE OF ADVICE YOU WOULD GIVE BEGINNING ROAD RACERS?

Doug Chandler: Be patient. Don't ride over your head and get hurt.

Kurtis Roberts: Concentrate on being smooth. Don't try to go fast right away.

Roland Sands: Chill out! Take it easy out there. Don't hurt yourself when you're first trying it. Don't get excited. Don't feel that you have to kill everybody the first time out. Take your time. Learn the bike. Learn the track.

Matt Wait: Stay focused. Keep your head down. Never give up.

Sam Fleming: Stop. Quit. Go back.

Anthony Gobert: Stick to doing what you're doing. Road racing is a hard, long road. So be prepared. Just go for it, really. My goal has always been to be the best at whatever I do. When I go out, I go out to win no matter what it is that I'm doing. I got a bit sidetracked, and it cost me a lot of money, (pause) a lot, a lot of money, and years off of my racing career. I could've achieved a helluva lot more by now, too. I could've been World Champion by now. Just be dedicated.

Miguel Duhamel: It's very hard. So if you're gonna get into it, make sure you go 100 percent and have some fun.

Eric Bostrom: Use your head. Get some dirt bike experience so that you know what a motorcycle does when it slides. Then you can start pushing it.

Nicky Hayden: Keep the rubber side down, I guess.

Rich Oliver: Be as logical and as calm as you can be about it. There's a lot that goes into road racing that's more than gutsy riding. There's a lot of thought that goes into it in getting things set up so that you can ride well. Be aware of what's going on around you. Let yourself learn at a pace that's comfortable to you. Don't rush it.

Steve Crevier: Find somebody with a lot of money to help you out. Don't start on anything too big, nothing bigger than a 600. Just so that you can enter more classes, and you can push them harder. The quicker you can push them, the quicker you're gonna learn.

Mat Mladin: Play golf. Give 100 percent all of the time. Most Sundays you come racing, things are not gonna be right. You're never gonna be fully happy with what you've got. Unfortunately, Sunday is race day. You've got to forget it, and give it all you've got. You can't be too fussy with your bike. Just learn how to ride it hard.

Ben Bostrom: Work up to it. Too many guys get on there and think they gotta go for it right away. You go harder into the corner, one inch. You go in a little quicker, one inch. Until you start feeling things break away. The biggest thing with new guys is they get in there and they're choppy with the throttle. That kills you. Just roll the throttle. No matter what happens, just roll the throttle. Before you know it, you're wide open.

Pascal Picotte: Never give up. I never give up. But it takes a lot of effort, a lot of money, a lot of courage, a lot of training. Don't try to go too fast. I think you gotta go step-by-step. Don't get on a Superbike right away. You got to start in the small classes and learn the basics. You gotta learn how to slide the thing. Get an XR100 and do some dirt track before.

Chris Ulrich: When you hurt yourself, make sure that you fully recover before you

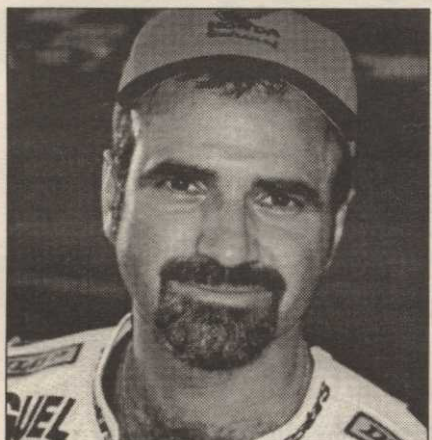


Anthony Gobert: "Stick to doing what you're doing. Road racing is a long, hard road." Photo by Colin Fraser.

come back. Don't get yourself in over your head. It's easy to do that.

Grant Lopez: Have fun.

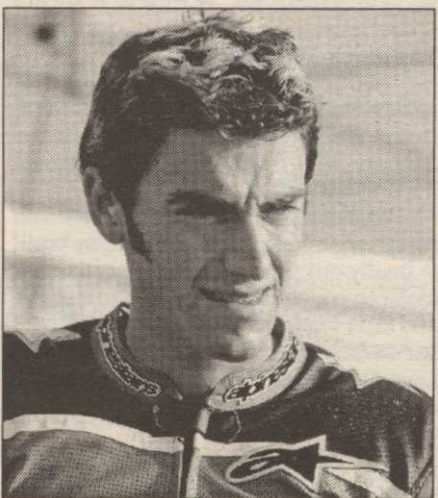
Jason Pridmore: Take your time. This isn't a sport where you can make a lot of mistakes and get away with them. It's not like golf where you miss a putt. You know that the next time you get a shot you're gonna make it. If you ride over your head or do things consistently wrong, then you're gonna get hurt sooner or later. Try to go to a riding school. Put yourself on a small-enough bike that doesn't intimidate you so much that you can't learn.



Miguel Duhamel: "It's very hard. So if you're gonna get into it, make sure you go 100 percent and have some fun." Photo by Colin Fraser.

Joe Prussiano: Try to learn lessons from the guys who have been doing it a while. It's easier to learn the lessons that way than the hard way.

Eric Wood: Work on your suspension first, then worry about your motor. Get a good competitive bike and worry about getting your suspension dialed in. Don't worry about making it fast. **RW**



Eric Bostrom: "Get some dirt bike experience so that you know what a motorcycle does when it slides." Photo by Colin Fraser.

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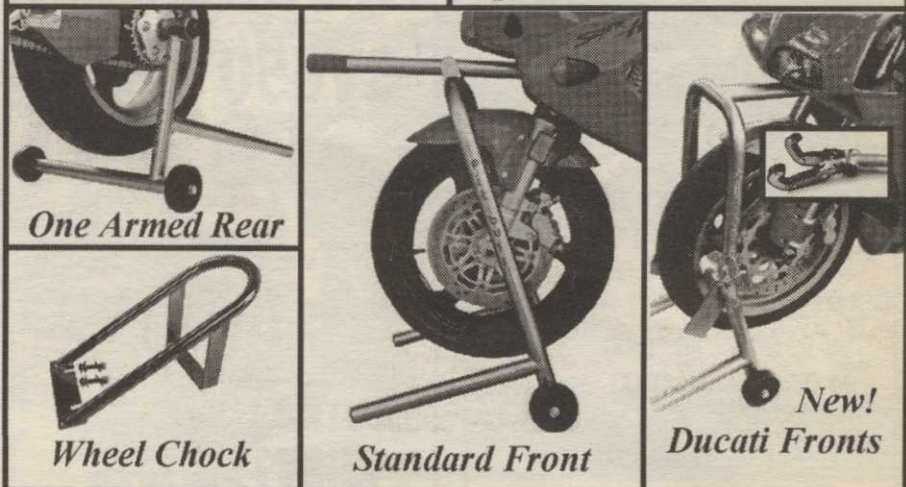
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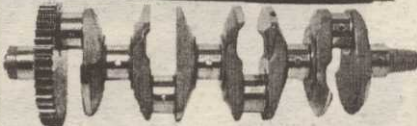
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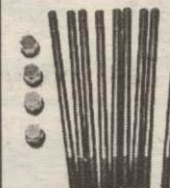
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Letters

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a streetbike piston/crank make different choices as to material and process because they each have different goals in mind. I'm wondering what those choices are and what facts about materials (e.g. aluminum, iron, alloys) and processes (e.g. cast, forged, built, welded) inform those choices and give rise to the end product. Thanks for your consideration and the best magazine in the country for fans of road racing, motorcycle technology and editorial freedom!

Awaiting enlightenment in Ohio.

Jeff Crowell
Beavercreek, Ohio

The quick answer is, parts life is a tradeoff: Do you want light, with corresponding better engine acceleration and more peak rpm, or do you want durable? The same concept sort of applies to race tires: Do you want sticky or do you want durable? The long and involved answer is, go get an advanced degree in mechanical engineering....John Ulrich, Editor.

Penguin School At Rausch Creek

This is in regards to the release from Pro Motion that they are the official licensing organization for all the events at Rausch Creek, Pennsylvania.

Pro Motion claims that they are providing a school and practice on the Friday prior to every CCS and WERA event at Rausch Creek. For the three events held by LRRS (the CCS Northeast region), the Penguin Racing School is the official licensing school and is holding both our schools (basic and advanced riding courses) as well as an open practice for all licensed riders and school graduates.

Thanks for you help in the matter, it is important to both the Penguin Racing School and the Loudon Road Race Series that the proper official school is recognized so that potential participants know where to go.

Thanks for your help.

Eric Wood
Mansfield, Massachusetts

Message From England

Congratulations on the buyout of American Roadracing. Glad to see these guys go, it was a bit of a pain in the neck.

Frankly, I don't think there was room for two publications going into this area of the market and yours was so far ahead of them in terms of content that obviously this deal had to go down and I hope it went down for the right price for you.

Good luck, hope your circulation increases and that we can see the EBC ads that we place going out in front of twice as many customers for exactly the same price for many years to come. (Ha Ha).

Andy Freeman
Northampton, England

The Back Protector Wars

Jeff Johnston of Specialty Sports has just FAXed me a copy of your article, To CE Or Not To CE, That Is The Question, in the January 2001 issue of *Roadracing World*. It's brilliant. Thank you.

I am really pleased with the article and really very much appreciate that the truth is finally out there, letting the consumer make an educated decision. Thanks again, and kind regards.

Geoff Travell
Cumbria, England

Adding Value To The Experience, With A Knee In The Side Of The Fairing

Just read *Roadracing World*, January 2001 and Chris' article. As a fellow WSMC racer, I am aghast at the lack of intelligence

that kid's father showed you at the track. I have raced with you and know you are a valued competitor. At the track people normally respect the rules that are right in the rulebook, but as in every other facet of our society there are people who do not do their homework and expect an exception for them.

Thanks for the article on the back protectors. Your magazine adds value to my experience. I don't even mind a little knee nudge going into turn one.

Mark Loveland
WSMC #639
San Diego, California

Big Money Good, Big Talent Bad, Or, The Case For Two-wheeled Affirmative Action

This letter is in comment to David Swarts' remarks in the article WERA Champions in the January 2001 issue, concerning Lee Acree's victory in the Lightweight Twins Sportsman race at the GNF (page 55). Members of our team, as well as our fellow club racers, found it hard to believe how such an accomplished Pro racer such as Lee, arguably one of the most talented Pro riders in the country, would want, or need to ride in a class that has traditionally been a club racers' class. A class Lee had little or no points in coming to the GNF (he started from row 13). A class Lee had nothing to prove in (as far as we know). Obviously not a class of his peers. It would also be hard to believe Lee needed the \$500 purse as he sold his SV the same weekend for \$4500 and then graciously donated the money to charity. What can a Lightweight Twin club racers' National Championship possibly mean on Lee's Pro resume at this stage in his career? What can it mean to a club racer who has devoted the entire season to reaching the ultimate goal for a club racer...everything! I'm sure our team can be flattered by taking second to such a talented and accomplished Pro rider, we just don't think he should have been a factor. I'm sure Lee and his team would be a little upset if Mick Doohan came out of retirement to beat him out of a hard-earned F-USA National Championship, just for shits and giggles.

Also in response to Mr. Swarts' comment on our being blind to hypocrisy, we don't see the hypocrisy in abiding to WERA rules and building a high-performance Superbike to compete in a Superbike class. Mr. Swarts accused us of being hypocrites for using a \$5000 motor to win the D Superbike National Championship, he was mistaken, that particular motor cost over \$6000 and I can assure you team MB Motorsports doesn't own the patent on costly Superbike racing engines.

Tray Batey made this comment in Lee's defense, "when there's money to be made it then becomes a professional motorcycle race." If grabbing the lead on the first lap after cutting through 30 motorcycles from row 13 on a basically stock motorcycle in a Superbike-based class, then "cruising home" for the win with a 7-second lead and then giving away thousands of dollars is being professional, then I say the definition of professional is "cherry picker." We've all seen Pro racers compete in club racing classes at National Championship events in the past. They are trying to get as much track time as possible before their events, which is understandable, and then they usually pull off the track before the last lap.

Matt Blashfield
Team MB Motorsports
Fayetteville, North Carolina

Okay, let's get this straight: Spending \$6000 on an engine for a "club racers" winner-take-all, one-race Championship is okay, but a guy with more talent winning the race on a near-stock motorcycle is not okay? Big money good, big talent bad? Your engine was legal for the class, Lee Acree was a legal entrant in the class, and there was nothing in the rules that said he had to pull over because he's a better rider and your rider wanted to win. The way to win

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racers—and, in this case, a title—is to win, which means beating everybody who has legally entered. I'm a racer, and you'll find no sympathy for two-wheeled affirmative action from me. Having said that, Swarts' coverage could have been—and will be in the future—more neutral in tone.... John Ulrich, Editor.

Why Do Some Bikes Have Two-Headlight High Beam and One-Headlight Low Beam?

I hope you can answer this question for me. Why is it that some of the manufacturers are using the single-headlight set-up on bikes with dual headlamps? My RC51, some Suzukis, Ducatis, and a few others have started doing this. I've heard everything from European styling to new D.O.T. specifications as the reason for single beam. What is the real reason? I myself like being able to burn my low and high beam at the same time at night, although around traffic-congested areas at night when I'm running just my low beam I tend to get at least one person who informs me that I have a headlight burned out.

Thank you for your time.

Jason K. Michelson
Cincinnati, Ohio

It's a matter of style, and of putting increased light on the road when high beam is selected. It's not a government thing.... John Ulrich, Editor.

He Is The Champion

I am the National Champion, CCS Amateur Lightweight Supersport. I can say that thanks to Grant Lopez and the Team Hammer Advanced Riding School at Daytona. Thanks, guys! You really made it happen for me.

I thought it might be a mistake getting in with all the street riders, while most of the racers were in the open practice session getting in track time. But I wasn't there for track time. I came to learn the track.

Staging for the first school session, I said I wanted to follow someone to learn the lines. I was told to "go with Lopez." And that's just what I did—for the rest of the day. Not only did I learn by following, but Grant would follow me, too. Then he took the time to explain where I could go faster (and show me by blowing by). By the final half-hour session I was flogging my SV to the limit to keep his GSX-R600 street-bike in sight. And I knew I was rollin'.

Afterward Grant really pumped me up by saying that I needed a faster bike, and the SV650 was holding me back. After all that I was ready to go out and win! And I did.

Thanks!

Bill Siemens
CCS #616
Alexandria, Virginia

An Interview With AMA President Rasor? Bring It On.

I received the February issue of the magazine and it is as good as usual. I especially appreciated the continuing coverage of the Edmondson v. AMA suit, which brings me to point of this letter. If you remember, I used to work for the AMA as Membership Development Director. I am still a member. I know Rob Rasor, the new AMA President, quite well. When the appeal is decided (and I am assuming that it will be in Roger Edmondson's favor and the AMA decides not to appeal to the Supreme Court), the AMA will no longer be able to say that they can't talk about a current court case. I would like to freelance an interview with Rasor concerning the Edmondson case in particular and the Association's relationship to professional racing in general.

If you are interested, please let me know so that I can start making phone calls and doing research. Thanks in advance.

Michael Reid
Westerville, Ohio

Yeah, we're interested. Bring it on.... John Ulrich, Editor.

Yes, It Is Political BS

First off, I want to say what a fine job you guys do of getting your magazine to me. My white-trash lifestyle dictates that I change residences frequently and your service leaves the others magazines behind—literally.

Second, shouldn't Paul Harrell's R1's lower fork pinch bolts be safety wired on the back cover of the July issue?

Third, that guy David Swarts writes the most comprehensive race reports on the planet. He seems to know what every bike is doing in every corner at every minute. Does he have one of those jet-packs like on that one episode of Gilligan's Island?

Fourth, and seriously now, how do you feel about the rules changes coming in the GPs? As a hopeful future TZ racer I wonder how this will trickle into club racing if this technology is abandoned. The parity and competition in GPs and World Superbike today leads one to believe that the rules change has little to do with the actual racing itself and more to do with some political BS. What do you think?

Keep up the good work!

John Coleman
Marina, California

Personally, I don't understand what was wrong with the current set-up, 500cc two-strokes in the 500cc Grand Prix World Championship and production-based four-strokes in the Superbike World Championship. But nobody asked me.... John Ulrich, Editor.

Buying A Stolen Bike

I am responding to the article about unknowingly buying a stolen engine (*Roadracing World*, June 2000). I, too, had an experience with a stolen bike. I bought an old ZX-600 at an asset seizure auction in Modesto. I was all starry-eyed about my first sportbike and even though it seemed to have been sabotaged, I was happy.

After a long, long, time of head-scratching I found the one broken (cut?) ground wire that kept it from running and was ready to legally get it on the road.

When I went to register it, the DMV clerk punches the numbers into the computer, kind of gives a start and says, "Oh you used the wrong form. Here, go fill this out."

Okay, fine, it happens all the time.

As I was busy copying numbers at a side table, a Sonora Police Department officer comes up and asks, "You Anton Styskel? Seems you are trying to do a title transfer on a stolen vehicle. Come with me."

I explained where I got it and they

.....
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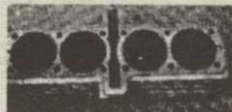
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Letters

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did some checking and said the files had never been cleared of the theft.

After weeks of unreturned calls by the San Mateo District Attorney the Sonoma Police finally told me to have the auction company clear it up. They eventually did, but it was a pain.

I rode it all over, crashed at a track school, sold it and bought a salvaged RF900. Wow! More power and comfort.

I buy cheap bikes and have all kinds of experience with goofy paper work: Title from the wrong bike with an unrecorded engine change and another with the "ex" selling it with no paperwork. Amazingly enough, the system out here can handle things like that.

Alex Styskel
Murphys, California

How To Become A Racer

In May I took Jason Pridmore's STAR class with a couple of friends. After my friends cleared out of the motel room I would be staying in an additional night I noticed that a copy of your magazine (May 2000) had been left behind. Now before continuing, it should be noted that until taking the Pridmore course I had never considered motorcycle racing as a hobby and as a result I would have never thought to pick up one of your magazines; indeed, this was the first time I had even seen *Roadracing World*. Nevertheless, as fortune would have it, the evening of May 28th found me asking the question of how I, a 30-year-old with limited financial means, might get involved in this activity just as I was pulling back the cover of the May 2000 issue.

It was therefore with great interest that I read the letter to the editor by Dr. Jim Adams. Although the letter itself was interesting I couldn't help but come to the conclusion that it would be nice to have a "how to get started in racing" book as a reference. At first I thought to write you and suggest that you consider compiling previous articles that might in some way serve as such a reference. However, upon reflection, I thought such an effort might result in a product that would have a difficult time flowing from one chapter to the next. Instead, it seems that a topic like motorcycle racing warrants a from-scratch approach, perhaps using previously written articles as a guide.

So with that said, I'd like to suggest that in the future *Roadracing World* consider involving itself in the production of a book that might bring beginners up to speed on motorcycle racing and perhaps bring newcomers to the sport. In the same breath I'd like to say that should such a project be a possibility I'd like to throw my name in the hat as not only a test subject but as a contributor. If, however, such a project isn't a possibility I'd appreciate it if you could provide references to previous articles that might help me get started.

Finally, it should be said that your technical articles are really super. After I finish my doctoral work in New Mexico, as a hobby I hope to get involved in some sort of writing outside of my field (Materials Science). One of the fields I have been thinking about is motorcycling. And while the questions I would like to answer (questions such as, "What advanced motorcycle school is the best for the rider trying to up his/her street skills?" and "Which bike is best commuter/multipurpose bike?" come to mind) I plan to use future *Roadracing World* articles as examples of how one should write technical articles about motorbikes.

Christian Frueh
Albuquerque, New Mexico

Go to roadracingworld.com, find the back issue section and search for The Club Racer's Guide series of articles by Max McAllister....John Ulrich, Editor.

Loves The Magazine, Doesn't Like The Yellow Stains From Unappreciative Racers

Let me first start by saying I really enjoy your magazine. I am 40 years old with few regrets in life. I just wish I didn't buy my first bike at 35. I love club racing although I am probably the slowest racer in history.

Every month I await the arrival of your magazine. I enjoy the articles and as a photographer I admire the images you receive from photographers all over the world. I respect that you don't kiss ass to anyone and you seem to tell it as it is, a rarity in today's world where magazines seem so influenced by their own agendas, often too afraid to offend potential advertising clients.

Well, I think that's enough pleasantries, and I would like to comment on a trend that I have noticed in your magazine that seems too prevalent with some racers. As a club racer I read the articles about some whiny racers and I just want to scream. Do these guys have any idea what it takes to race using your own dollars? Granted professional racers perform at a level that I can't even imagine, but still. To show you what I mean: A few issues ago, I got out a yellow highlight pen. I outlined quotes from racers who, in my opinion were crybabies. Just once I'd like to read a guy say "I sucked out there, I owe an apology to my sponsors and fans." Instead they complain about their tires, their crew and the tracks. Sorry, back to my experiment with the highlight marker. I highlighted racers' negative comments and complaints. Well, because of this experiment I have a new nickname for Kurtis Roberts: The Yellow Stain. After highlighting Kurtis' comments, my magazine looked like my dog used the page for a place to sit and squat. And Kurtis isn't the only offender, I wouldn't exactly consider Mat Mladin happy-go-lucky. I'm not certain if Carl Fogarty is always pissed off or it's that he just got a dental bill and he was told how much it will cost to straighten his teeth, but please, Carl, it's not all that bad, is it? Would someone please remind Carl that in England they think he should be King. "Carl, you raced in some of the most beautiful parts of the world and were paid a ton-o-cash and oh yeah, you married a babe, Michaela Fogarty, who doesn't seem to mind that your teeth are the color of tea."

Don't get me wrong, there are some fast guys who really seem to giggle at what they do. Guys like Josh Hayes and the Hayden brothers. Speaking of brothers, does anyone else think that Eric Bostrom sounds a lot like Bob Dylan's long-lost son? Both Eric and Ben seem to get it, and of course there is Miguel Duhamel, I can't imagine Miguel ever quitting; he seems to be having way too much fun.

Look, no job is perfect, I am certain that at times racing for a living must suck, racing is very dangerous, just thinking about what Joey Dunlop's friends and family are going through is evidence enough of what can happen. And I am certain the sponsors put a huge amount of pressure on racers to perform. If I'm hurt; I don't race, professional racers don't have that luxury. But again if it is as bad as some of them make it out to be, then they should drag their long faces out of there. Just ask any ex-racer, club or pro, and they will tell you how much they miss the racing and I bet they even miss smart-ass critics like me.

Bill Marsh
CMRA #29
Calgary, Alberta, Canada

I'm not sure they miss you....John Ulrich, Editor.

GSX-R750 Transmissions

In the November 2000 issue of *Roadracing World*, the coverage of the Willow Springs 24-hour race contained several comments about transmission problems with the 2000 Suzuki GSX-R750. Page 47: "Then in the 21st hour, ebsco-suzuki.com's tranny locked up with the exact same symp-

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toms as the Ebsco Suzuki bike. John Ulrich clued the crew in to the problem area, and the crew fixed the tranny with the motor still in the frame."

I have raced a 2000 Suzuki GSX-R750 since July 2000, and have been lucky enough not to have any transmission problems, but your article has me worried. Please clue me in to the potential problem and solution so that I can avoid tranny lockup at my next race in Daytona, 2001.

I have been a loyal subscriber and reader since your excellent magazine began, and would appreciate your help. Thank you.

Dale Dandrea

Lakeville Massachusetts

In a few 2000 GSX-R750 Suzukis, especially units made early in the production run, the allen-head screw in the center of the shift pawl either was not tightened enough during assembly or came loose during racetrack use. The cure is to put Loctite on the screw and retighten it. While you're checking it, also look at the two Phillip-head screws that locate the shift drum in the cases...John Ulrich, Editor.

Looking For Photos From 20 Years Ago

First I would like to thank you for all the enjoyment you have given me over the years. Not only with *Roadracing World*, but back to your days at *Cycle World*. I still refer back to your articles from those days. Recently I was reading your riding impression of the OW69 again. Last year I bought a set of Mikuni 29mm smoothbores based on the results you had with them on your Suzuki GS750 endurance racing bike! A few months ago I was also looking up some information on the Yamaha TZ250B and Hall 'n Still TZ250D from 1991 and 1993 issues for a friend. I guess I am one of the few that keeps going back to older issues.

Recently I was able to buy a Bimota 250 for restoration. I would like to paint it in the Adriatic colors as raced by Randy Mamola in 1979. In the June 1979 issue of *Cycle World* you reported the Daytona 250 race and in the July 1980 issue you wrote a nice article about Randy which showed a good photograph of the bike.

Do you have photographs available of Randy's Bimota 250? It would be great if they are in color but black and white would be fine, too. I hope you are able to help. Please let me know how much the cost is that I need to cover. I would say it is rare that you receive questions about articles that you wrote 20 years ago! I look forward to hearing from you. Thank you very much.

Fedor Van De Pol
Donabate, Ireland

I regret that due to several moves in the meantime I do not know where the photos in question are, and I wouldn't even know where to start looking. ...John Ulrich, Editor.

Send letters to Editor John Ulrich, *Roadracing World*, P.O. Box 1428, Lake Elsinore, CA 92531. All letters must be signed and must include your true name, complete address and daytime phone number to be considered for publication. If we cannot reach you by phone to verify your letter, it will not be published. Letters signed with fictitious names and anonymous letters will not be published. Published letters do not necessarily reflect the official position of this publication and all letters may be edited for clarity and length. Delusional letters from raving lunatics, conspiracy theorists, professional victims or others with a tenuous grasp on reality may or may not be published, depending upon their apparent entertainment value as judged by the editor.

Willow WSMC

continued from page 25

on his stock 2001 RS250 Honda and West.

Haskovec said, "This is totally awesome. I saw Chuck get holeshot. So I know he's gonna be gone. I just worry that he don't go too far. In three or four laps, I get through traffic. Then I just focus on him. He race first time this set-up and first time in three years on Dunlops. I have advantage over him because I'm familiar with Dunlops much more than him. I just wait 'til last lap. I saw Chuck was struggling with grip last three laps."

When asked about his new Dunlops, Graves said, "They're working great. They're very predictable. I'm real happy to be on them. I can't say enough for the tires."

Haskovec came back out in Formula Two and ran away to an 8-second victory. Pridmore, West, and Palazzo battled over the runner-up spot for much of the race, allowing DiSalvo to catch up from the back of the grid on his 250. DiSalvo got into the mix halfway through the 10-lap race but couldn't get past the 600s. Pridmore ended up second, inches ahead of West, DiSalvo, and Palazzo with Graves fifth in front of Dowie, Mark Watts, Kevin Murray, North County Hyper Sports' Sam Carnibucci, and John Ulrich racing his son Chris' 1999 TZ250 for the first time.

The Skorpion Racing Open Modified Production race came down to a duel between Toye and Dunlop's Kovarick. Both riding Yamaha R1s in less-than-optimum physical condition after a long night of celebrating at the WSMC awards banquet, Toye and Kovarick crossed the line side-by-side several laps in a row. Toye started the final circuit by pulling out what looked like a comfortable margin, but Kovarick is known for his mastery of turns eight and nine. Kovarick closed up at least 10 bikelengths in the last two corners and pulled alongside Toye as they passed under the checkered flag. It took nearly an hour for the winner to be decided with Toye getting the nod. Kovarick got second with Clinton Whitehouse coming back from a crash earlier in the day to get third.

Alexander took his only win on the day in Maxima Oils 750cc Superstock over Meiring, Hagan and Pearson. Then in Graves Motorsports 650cc Superbike, it was Dowie again showing all of the other 600cc pilots how to start a race by leading into turn one. Dowie's reign was short-lived as Pridmore, Wait and Palazzo came through to lead the pack after one lap. Palazzo and Dowie faded while Pridmore and Wait had a battle for the remaining five laps. Wait and Pridmore swapped positions in nearly every corner until time ran out. Pridmore crossed the line one bikelength ahead of Wait with Palazzo third, Graves fourth, Dowie fifth and Kopecky sixth. After the race, Wait was disqualified for accidentally signing up for the wrong race and running in 650cc Superbike without being entered.

Haskovec is sponsored by Hyper Cycle, Dunlop, Maxima, Spinal Conquest, EBC, Performance Machine, NGK, Lindemann Engineering, VP Racing Fuels, WSMC, Motion Pro, Sharkskin, Sammy Tanner/ Arai and RGB.

RESULTS

TOYOTA CUP UNLIMITED FORMULA ONE GRAND PRIX: 1. Vincent Haskovec (Suz GSX-R1100); 2. Chuck Graves (Yam YZF-R1); 3. Ken Chase (Suz GSX-R750); 4. Richard Alexander (Suz GSX-R750); 5. Jeremy Toye (Yam YZF-R1); 6. Jason Pridmore (Suz GSX-R600); 7. Jeff Stern (Suz GSX-R750); 8. Jeff Hagan (Suz GSX-R750); 9. Jason DiSalvo (Hon RS250); 10. Jacob West (Yam YZF-R6).

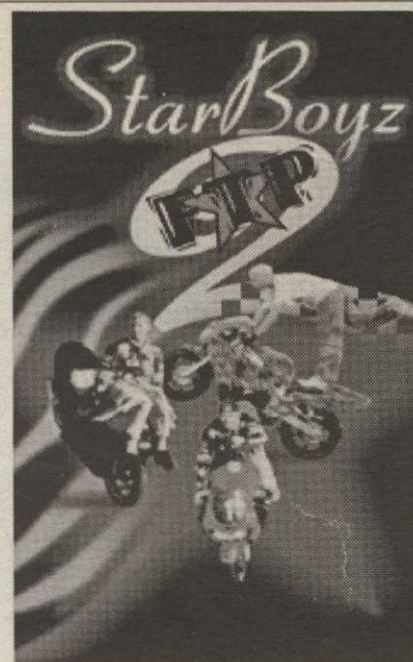
TEMECULA MOTORSPORTS OPEN SUPERSTOCK: 1. Clinton Whitehouse III (Yam YZF-R1); 2. Chris Scott (Yam YZF-R1); 3. James Krauss (Yam YZF-R1).

MAXIMA RACING OILS 750cc SUPER STOCK: 1. Richard Alexander (Suz GSX-R750); 2. Tony Meiring (Suz GSX-R750); 3. John Pearson (Suz GSX-R750); 4. Jeff Hagan (Suz GSX-R750); 5. James Romero III (Suz GSX-R750); 6. Mark Chadwick (Suz GSX-R750).

G.M.D. COMUTRACK L.A. 600cc SUPERSTOCK: 1. Vincent Haskovec (Suz GSX-R600); 2. Mark Palazzo (Hon CBR600F4); 3. Matt Wait (Hon CBR600F4); 4. Jason Pridmore (Suz GSX-R600); 5. Chuck Graves (Yam YZF-R6); 6. Jacob West (Yam YZF-R6).

500cc SUPERSTOCK: 1. Joe Hammond (Yam FZR400); 2. Joe Hylton (Yam FZR400); 3. Jeff Peplot (Yam FZR400); 4. Jodie York (Yam FZR400); 5. Tony D'Augusta (Yam FZR400); 6. William Erwin (Yam FZR400).

PRO-ITALIA APRILIA CHALLENGE: 1. Andre Castanos (Apr RS250); 2. Vicky Jackson-Bell (Apr RS250); 3. Oliver Chami (Apr RS250); 4. Amir Khoyi (Apr RS250); 5.



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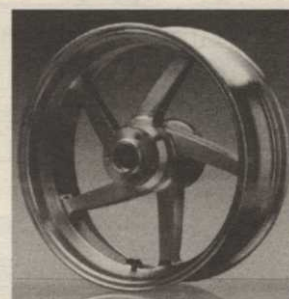
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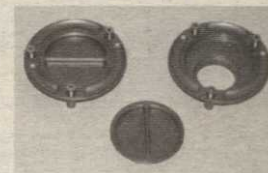
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FIRST PERSON / OPINION:

Inside The GSX-R1000's Suspension

By Max McAllister

It appears that Suzuki has finally succeeding in doing what all of the manufacturers have tried to do for years. Real "factory" horsepower, in a superbike chassis, with 600cc class weight. Of course I am talking about the 2001 GSX-R1000. Now that we have it, I am not sure what we should do with it!

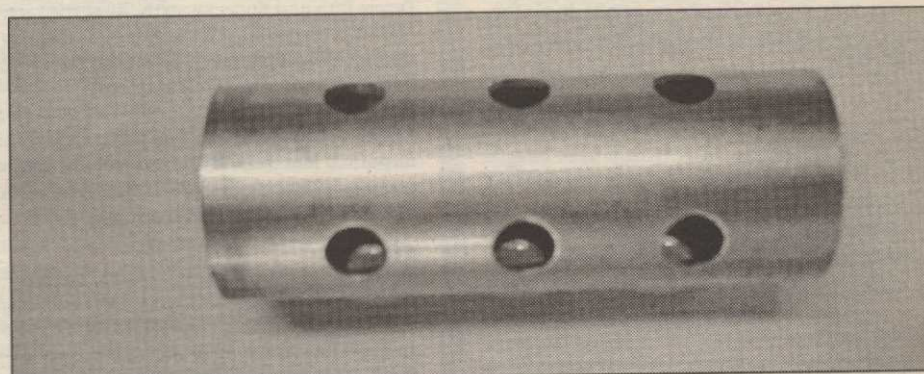
As street-based racing motorcycles gain power, stop better, and lose weight, you would hope that the suspension components complement these packages by taking a corresponding leap in technology. Sometimes you get it, sometimes you don't. The funny thing about suspension components, unlike the motorcycles they are attached to, is that sometimes portions of the package leap ahead, while other portions crawl back into the dark age. Such is the case with the GSX-R1000.

I do suspension work for a couple of teams that will be racing the GSX-R1000 in 2001, which is why I recently got my hands on a GSX-R1000 that had been delivered to G.M.D. Computrack Atlanta for a chassis measurement. While Kent Soignier and the G.M.D. crew took measurements on the new bike, I took a look at the stock suspension components' fit and function. I used Kent's right-hand man and former NASB National Champion Brian Livengood for our sag measurements, since sadly enough, all of us tuner-types seemed to have taken on a little more sprung weight than any of us care to admit. Brian weighs 155 pounds, and is lighter than the "average" guy by about 20 pounds. But for comparison purposes, he is only

that the wheel rate was different from the 600/750 platform, which I didn't anticipate. I would recommend that riders weighing between 150 and 190 pounds start with a 425 lbs./in. spring on this bike, whereas the new 600/750s prefer a 400 lbs/in. spring. In the process of measuring the sag we detected 4mm of stiction in the rear suspension, which is below average, and bordering on being not good. The bike had 1400 miles on it, so it wasn't because it was new. The cause could be lack of grease in the linkage, or a crummy shock.

Suspension components on Suzukis over 750cc are made by Kayaba (600/750s are made by Showa). The shock had a very wide range of low-speed rebound damping, but had no high-speed rebound damping at any setting. This would make for pogo action on the racetrack. The best setting I could find for the rebound was about 8 clicks out, and I thought it stunk. The compression adjuster had a wide range of adjustment, and since I did not disassemble the shock, I cannot comment on its bump-absorbing ability. The shock was stiff all the way around as received, and I backed the compression adjuster off to 14 clicks, and it freed up quite a bit.

When I went to measure the forks, the stiction in them was atrocious. Since this particular bike had been used during the worldwide press intro at Road Atlanta, the tires had been changed on the bike many, many times, and I suspected foul assembly skills. I looked down at the axle, and sure enough, some meatball surgeon had pushed the axle in and tightened the pinch bolts with the forks all bound up. The end of the axle was sticking out 1/16th-inch! I tried to loosen the pinch bolts and couldn't. They were so tight, it took two hands to get the little 8mm bolts loose. They were so badly overtightened that they had bent and stretched and were close to breaking. Lesson: If you are a meatball surgeon, stick to meatballs and leave the motorcycles alone. At least



Kayaba engineers went to great lengths to make the GSX-R1000 fork as light as possible, as evidenced by the lightening holes in this aluminum preload spacer.

Photo by Max McAllister.

five pounds lighter than Sam Fleming, whom we used for the 600 Shootout suspension coverage in the December 2000 issue.

We measured the sag on the shock and found we had to soften it substantially. We were able to get 8mm of free sag, but only about 29mm of rider sag with the stock spring. We would have liked to have seen more sag, but these numbers told us that the spring was too stiff and we wouldn't be able to get where we wanted to go. The stock shock spring tested at 440 lbs./in., with a straight rate. This told me

use a torque wrench. The torque spec for an 8mm bolt is 18 lbs.-ft., not 180.

Once I centered the forks up, the stiction dropped to 6mm, which is very, very good. We measured the sag and found 22mm free sag, and 34mm rider sag with the adjuster in the middle. I rate-tested the springs and found them to be .85 kg/mm which is not bad for a streetbike. For the track, I recommend a combination of one .90 kg/mm spring and one .95 kg/mm spring, for a rate of .925 kg/mm. The new Suzukis are so light, that I have found this rate to be much better than either

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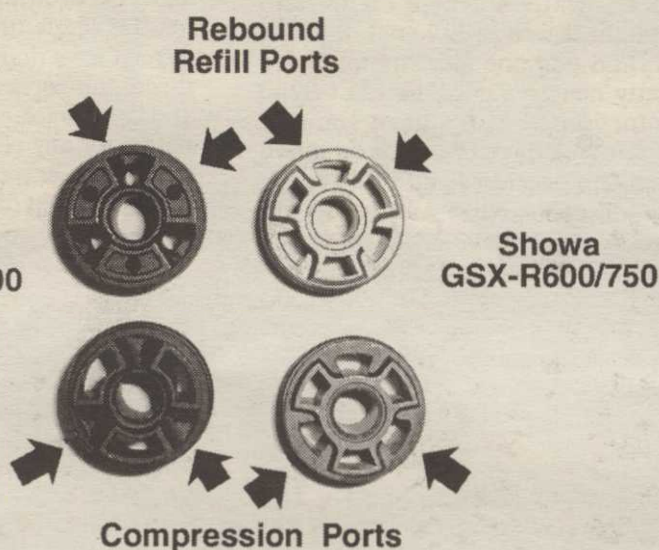
.90s or .95s alone. Our racers convinced me of this so much that I had springs custom wound to this rate for my company. If you use a combination of 90 and 95, that will work fine. Put the lighter spring in the left leg. "Left=light", so you can find it, if you want to change either spring (that's a tip from Keith Perry).

Kayaba typically makes the biggest, heaviest, clunkiest, junkiest, worst damped forks in the motorcycle industry. Most Kayaba forks are better suited to be landing gear on cargo planes than suspension components on sportbikes. But for the first time in history, for the GSX-R1000, Kayaba made a really bitchin' lookin' lightweight fork. Each side weighs in at a feathery 7.6 pounds, and even the aluminum preload spacer has been drilled to reduce weight. The fork tubes have a titanium nitride coating for racey looks and ding resistance. Both of the internal teflon bushings

had to ride one of these bikes stock.

Showa and KYB have always seemed to be at opposite ends of the spectrum. GSX-R600 and GSX-R750 Showa forks have enormous high-flow compression ports, which are optimum for absorbing bumps. The Traxxion Dynamics Axxion Valve and the Race Tech Gold Valve are both similar designs. It would seem that someone at Suzuki should be able to demand a similar damping philosophy for the 1000 as is found in the 600/750. They are the antithesis of each other.

To make matters worse, KYB has used a rebound piston that is just short of being a copy of the ill-conceived Honda HMAS damping system. The problem with this piston lies in the refill ports. When the fork is in the compression mode, the rebound piston should pass through the oil in the cartridge and do nothing. When the fork goes into the extension mode



Not all GSX-R forks are created equal, as seen in this comparison of a KYB fork piston from the new GSX-R1000 (left) and a Showa fork piston from the GSX-R750 and GSX-R600.

Note that the compression damping ports on the GSX-R1000 piston are so small that they're hard to see in this photo. This is the worst possible piston design for absorbing bumps. And the GSX-R1000 fork piston's rebound refill holes are so small that they will generate compression damping over sharp bumps as well. This is Kayaba's copy of the Honda HMAS damping system, except worse. The Honda fork pistons have four ports, while the GSX-R1000 fork pistons only have three, which just equates to less flow, and more harshness. Photo by Max McAllister.

are in the upper slider. GP forks and Ohlins Superbike Forks are made this way. This design keeps both of the bushings parallel to each other, and this reduces stiction all through the stroke. All of the internal parts are aluminum. It almost seems that someone at Suzuki must have gone to Kayaba with a Showa fork and said "Here, try and make something like this..."

As far as the damping set-up goes, this is the new successor to the YZF-R1/YZF-R6 for "Worst Damped Fork of the Millennium". The compression piston looks like it is out of an old ZX-7R, which is known as the worst component ever installed in a cartridge fork. It is the purest form of "orifice-type" damping ever. The compression ports are so small, you won't even be able to see them in a photograph. You have to have one in your hand, and hold it up to light to see the tiny safety-wire-gauge holes. Basically, when you hit any type of sharp bump, this fork will momentarily lock up, since it cannot pass any oil through these tiny holes. The result is eye-popping high-speed chatter, and dramatic tire wear. With the compression adjuster all the way in, the fork is like a strut. The only place oil can flow is by the needle in the adjuster. I would run this adjuster way out on a stock fork if I

(rebound), then oil is forced through the rebound ports and by the rebound valving. The refill ports in the GSX-R1000 rebound piston are so small that they will artificially generate compression damping over sharp bumps. Unfortunately, they should be replaced as well. Again, Traxxion Dynamics and Race Tech are the only two companies that offer aftermarket upgrade parts to solve this problem. As received from Suzuki, these forks don't rebound damp at all. I would run this adjuster right near full hard, even though it won't make any difference.

The basic construction of these forks is really good, and will give suspension tuners an exceptional platform to work with. They will not be inexpensive to upgrade. However, in my mind, a good suspension tuner could make these forks work as good as anything you could buy.

People ask me all the time, "Why don't they just make this stuff work at the factory?" I just don't know. To be honest, it wouldn't cost them one penny more to manufacture a set of forks built with parts just like mine. Of course, you'll have to convince the manufacturers to do that yourselves. I wouldn't have a job if they did it right!

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FIRST PERSON / OPINION:

Young gun

By **Nicky Hayden**

Basically there's not much drama to report in this article. It's been pretty boring, actually. I got home from Las Vegas a couple of days before Christmas and didn't do a whole lot over the next couple of weeks. But it was good to have some time off at home. Some of my friends were in from college also. It was fun to see those guys that I don't get to see much anymore. Santa Claus came to see me and brought me something pretty cool. I got a Montesa trials bike. I've always watched them on TV and thought it was pretty cool. So I got a brand new one for Christmas. It's pretty neat. It's got a Honda CR250 motor in it. But it's been snowing so much, I haven't got to do much with it. I started it up and rode it around in the snow a little bit, but

them. Eddie Lawson was there also. I had never met Eddie before, so it was fun to listen to some of his stories from his World Championship days.

We left Canada after the show Sunday night and came straight out here to Los Angeles for the next month or so. The weather is so bad back home that we figured that we'd come out here and do some training. We rented a Budget cargo van so that we could put all of our bikes and stuff in it. I picked up a CR250 from Honda, and Tommy got a YZ from Yamaha. We're staying at my mechanic Dan Fahie's house. I stay with him a lot when I'm out here.

Monday, January 8 it rained too much to do any riding. Then Tuesday and Wednesday we went out to Willow Springs to do our Honda photo shoot which was kind of boring. The weather wasn't really too good so we didn't get to do any testing. It was photos the whole time for two days. We weren't even doing laps. We would go through a corner, then turn around and come back. That was a bummer, not to get any real riding time in. So we did that for two days and came back to LA. The next day Tommy and I went



"Then Tuesday and Wednesday we went out to Willow Springs to do our Honda photo shoot, which was kind of boring. ... We weren't even doing laps. We would go through a corner, then turn around and come back." Photo by Kevin Wing/Courtesy Vreeke & Associates.

that's all. I haven't gotten a chance to ride for real yet. The weather's been really bad in Kentucky this winter. I mean, the snow will just not go away. It hasn't been this bad in a long time, as far as I can remember. The only riding we've been able to do is ride on the ice in the driveway on XR100s. So I've been going to the gym a lot to work out.

On the morning of January 5th, my brother Tommy and I flew up to Toronto for the bike show up there. We were there for Joe Rocket because that show is a real big deal for them, but I also signed some autographs for Honda of Canada. The first night that we got there, the boys at Joe Rocket had rented out this indoor go-kart place. They had lap timers on the karts that kept track of everything. It started out with a practice, then a qualifying run, then we had a couple of heat races, then the main event. They kept points all through the thing, and I came away with the victory. So I was pretty stoked about that. My brother had the fastest lap, but I got the win.

The next day was a pretty long day. I could not believe how many people were at this show. It's open to the public, and the place was absolutely packed elbow-to-elbow for three days! There were a lot of the Canadian road racers there, and I got to meet some of

and rode at a place we knew from David Vuillemin's mechanic. Then it started raining again for a couple of days. So we had our bicycles sent out, and we went bicycling.

Friday night we got hooked up with some people and went to a Los Angeles Lakers game. They were playing the Cleveland Cavaliers. Somehow these people got us in the owner's box. So we got to sit in the owner's box, got to meet the owner, and got to meet Magic Johnson. I'm not a huge basketball fan or anything. I like to play but watching is not one of my favorite things to do. It was a pretty close game, so we had a good time. After the game we got to go down and walk on the court then go to a party afterwards. There were some players at the party but not Shaq or Kobe. Then Saturday night we went to the second Supercross race at San Diego. It was a really good race. Those guys put on a great show. We had a good time watching the races, hanging out, and meeting a few people. I saw Miguel and Matt Wait there cruising around.

So other than that, there hasn't been much going on. We'll just continue training out here and get ready for our next test up at Laguna. I'll tell you how everything went next month. **RW**

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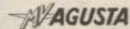
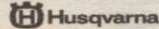
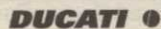
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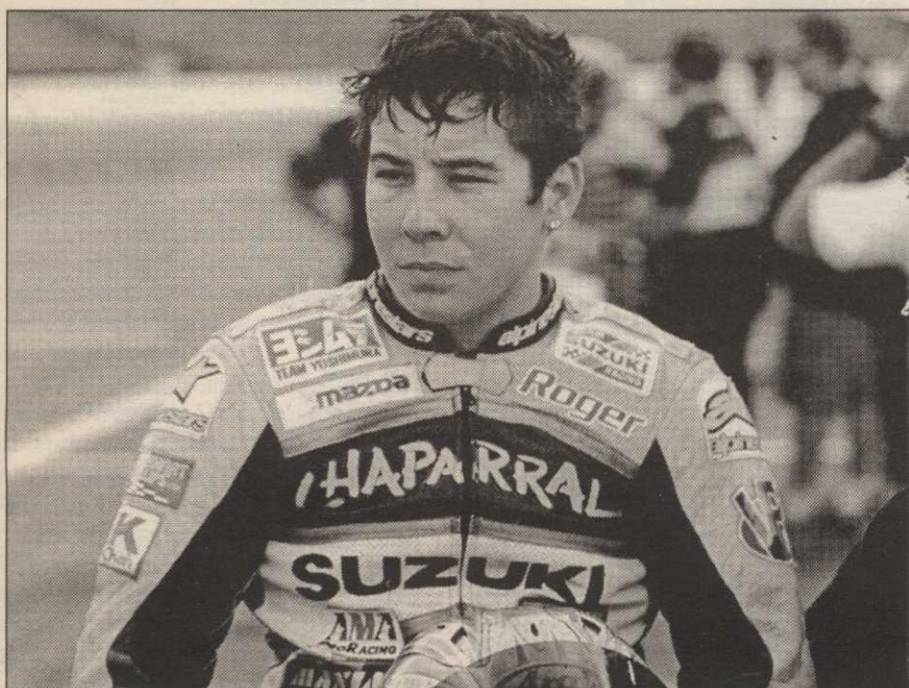
RIPPIN' ROG

By Roger Lee Hayden

After Pahrump and Las Vegas, we went to the Daytona tests. Everything went real good at Daytona. I rode the old Honda 600 for the first day and half because we only have one F4i. So Josh (Hayes) rode it and I rode the old bike. I just wanted

We've got everything from 100s to flat trackers to Nicky's CBR600F4 street bike that he hardly ever rides. If I was going to do any training, I was gonna have to ride in the snow. So I rode my new XR100 around in the snow some. Snow's not bad to ride in, but the ice isn't fun. My buddy Clint has started working out with me at the gym. I'm trying to get in the best shape I've ever been in.

We're back in school now. The semester just ended. I made the Honor Roll! I'm joking. I did pass everything, though. I've only got one semester of my Senior year left. I haven't been pulling pranks on the Freshmen,



"Everything went real good at Daytona. I rode the old Honda 600 for the first day-and-a-half because we only had one F4i." Photo by Colin Fraser.

to get more time with the bike and more time to work with my new mechanic, Grant. On the second day, I got to ride the new F4i. The thing that I liked the most about it was that it seemed to come off the corners a lot better than the old F4. The new Honda seemed to do better switching back and forth like through the chicane. It's way better than the Suzuki. The Honda's a lot faster, it gets off the corner better, and I think it's more stable also. I'm still getting used to the way the Honda's so skinny.

I got to ride around with Doug (Chandler) for a long time one day. I wasn't trying to really pass him. I was just trying to learn from Doug. One thing about Doug, he's so smooth. His bike never seems to get out of shape. Doug has helped me and my brothers out a lot over the years. I also got to ride around a couple of laps with Tommy and Nicky. We got to play around a little bit.

The third day was actually the best. The track was good all day, but I could only ride until noon. That was when I did my best time. My 1:55.2 was like the fifth-fastest time. I think my best on the Suzuki was a 1:56.8, but I don't think my improvement is all the bike. I definitely feel like I have improved as a rider.

We left early because we were due to have an ice storm back home. So me and my dad got our flight moved up from 6:00 to 2:00 p.m.. We barely got into Owensboro just before the storm.

We had Christmas and Santa Claus stopped by. He brought me some clothes and a new XR100. Now we've got about 10 motorcycles laying around the house.

though. My sister's a Freshman this year, and I've been too busy keeping an eye on her and making sure all of the boys keep their distance. This semester I'm taking Parenting, Nutrition, Physical Education 2, Media, and everybody has to take Religion. Then I've got this one class where the teacher is a coach and you don't do anything but watch TV. So hopefully it will be a breeze to the end, but you can be sure that they're always going to yell at me for missing days. When I told the Dean that I would miss three days of school to go do testing at Daytona, he told me that he thought we should be able to get it all done in two days.

We had a photo shoot out at Willow Springs in January. It was alright. We had to go through turn three, turn around, come back down, and do it again over and over. I was there for two days, and I didn't do one full lap! I kept having trouble turning the bike around. I almost dropped...well, I actually did drop the thing twice. It wasn't a big deal. All I broke was the clutch lever, but it was kind of embarrassing. Kurtis, my brother, and a bunch of people were giving me crap over it. The whole thing was actually kind of boring because we had to be there from dawn until sunset, and it was cold. But you've gotta do what you've gotta do. It's all part of the job. We have another test coming up at Laguna Seca, and we have a lot of stuff to do. We need to ride the Xtreme bike some more because that is probably going to be our last test. I like Laguna, so I'm looking forward to it. Next time, I'll tell you how it went.

RW

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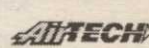
Aaron Clark 1st Place Aprilia Cup Challenge
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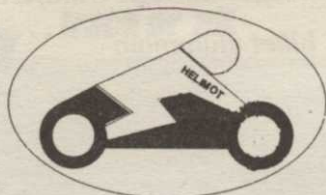
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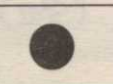
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2001 Aprilia RSV1000 Mile R

Engine Configuration:	60-degree V-Twin, 4-stroke, DOHC
Engine Displacement:	997.62 cc
Engine Cooling:	Liquid
Compression Ratio:	11.4:1
Combustion Chamber Design:	Tumble Effect Design
Valves Per Cylinder:	4
Intake valves Per Cylinder:	2
Exhaust Valves Per Cylinder:	2
Bore x Stroke:	97 mm x 67.5 mm
Claimed Peak Horsepower (Crankshaft):	128 bhp @ 9500 rpm
Claimed Peak Torque:	74 lbs.-ft. @ 7000 rpm
Measured Peak Horsepower:	N.A.
Measured Peak Torque:	N.A.
Claimed Power To Weight Ratio:	3.41 pounds per horsepower
Engine Redline:	10,500 rpm
Valve Angle (Included):	15.0 degrees Intake/ 14.5 degrees Exhaust (29.5 degrees)
Combustion Chamber Volume:	47.96 cc
Valvetrain Type:	DOHC, Gear and Roller-chain, Bucket Followers, Shim-under-bucket Lash Adjustments.
Valve Adjustment Interval:	9300 miles
Intake Valve Diameter:	36.0 mm
Exhaust Valve Diameter:	32.0 mm
Intake Valve Stem Diameter:	6.0 mm
Exhaust Valve Stem Diameter:	6.0 mm
Intake Valve Maximum Lift:	10.7 mm
Exhaust Valve Maximum Lift:	10.7 mm
Intake Valve Timing:	Open BTDC: 20 degrees Closed ABDC: 62 degrees Duration: 262 degrees
Exhaust Valve Timing:	Open BTDC: 64 degrees Closed ABDC: 15 degrees Duration: 259 degrees
Valve Timing Measurement Point:	1.0 mm
Fuel Delivery System:	Nippon Denso Fuel Injection
Throttle Body Venturi Size:	51 mm
Air Filter Type:	Pleated Paper
Exhaust System Type:	Two-into-one
Ignition System:	Digital Electronic, Two Spark Plugs Per Cylinder
Lubrication System:	Dry Sump
Oil Capacity:	4.2 quarts (4.0 liters)
Fuel Capacity:	4.7 gallons (18 liters)
Transmission Type:	6-speed, Constant Mesh
Clutch Type:	Multi-plate, Wet
Clutch Actuation System:	Hydraulic
Clutch Spring Type:	Coil
Number Of Clutch Springs:	6
Number Of Clutch Plates:	19
Drive Plates:	9
Driven Plates:	10
Primary Drive:	Gear (straight-cut)
Primary Drive Gear Teeth (Ratio):	60/31 (1.935:1)
Final Drive Sprocket Teeth (Ratio):	42/16 (2.625:1)
Transmission Gear Teeth (Ratios):	6th: 23/27 (0.852:1) 5th: 22/23 (0.957:1) 4th: 24/22 (1.091:1) 3rd: 26/19 (1.368:1) 2nd: 28/16 (1.750:1) 1st: 35/14 (2.500:1)
Transmission Overall Ratios:	6th: 4.328:1 5th: 4.861:1 4th: 5.542:1 3rd: 6.949:1 2nd: 8.889:1 1st: 12.698:1
Theoretical Speed In Gears At Redline:	6th: 181 mph 5th: 162 mph 4th: 142 mph 3rd: 113 mph 2nd: 88 mph 1st: 62 mph
Engine Speed At 60 mph:	3500 rpm
Frame Design (Material):	Perimeter Twin-spar (Aluminum Alloy)
Rake/Tail:	25.0 degrees/ 3.8 inches (97 mm) with 70-series front tire, 25.0 degrees/ 3.7 inches (95 mm) with 65-series front tire
Wheelbase:	55.7 inches (1415 mm)
Seat Height:	32.3 inches (820 mm)
Footpeg Height:	15.0 inches (380 mm)
Handlebar Height:	33.1 inches (840 mm)
Steering Stem to Seat Center:	29.9 inches (760 mm)
Front Forks:	Ohlins Inverted, Cartridge
Fork Tube Diameter:	43 mm
Fork Adjustments:	Rebound Damping: 25 Positions (clicks) Compression Damping: 25 Positions (clicks) Spring Preload: 14-tum Range
Front Wheel Travel:	4.7 inches (120 mm)
Rear Wheel Travel:	5.3 inches (135 mm)
Rear Suspension Type:	Ohlins Single Shock, With Piggyback Reservoir, With Linkage
Rear Shock Adjustments:	Rebound Damping: 25 Positions (Clicks) Compression Damping: 25 Positions (Clicks) Spring Preload: 4.0 mm Range
Front Brakes:	320 mm (12.6-inch) Dual Discs, 4-piston Brembo Calipers
Rear Brake:	220 mm (8.7-inch) Disc, Twin-piston Brembo Caliper
Front Wheel:	3.50 x 17.0-inch Forged Aluminum Alloy
Rear Wheel:	6.00 x 17.0-inch Forged Aluminum Alloy
Front Tire:	120/65-ZR17 (120/70 optional) Pirelli Dragon Super Corsa Radial
Rear Tire:	180/55-ZR17 (190/50 optional) Pirelli Dragon Super Corsa Radial
Claimed Dry Weight:	403 pounds (183 kg)
Claimed Wet Weight:	432 pounds (196 kg)
Weight Distribution, Percent:	50.0F/50.0R
GVWR:	N.A.
Overall Length:	81.5 inches (2070 mm)
Overall Width:	28.5 inches (725 mm)
Overall Height:	46.1 inches (1170 mm)
Ground Clearance:	5.0 inches (127 mm)
Suggested Retail Price:	\$17,299

2001 Aprilia RSV1000 Mile

Engine Configuration:	60-degree V-Twin, 4-stroke, DOHC
Engine Displacement:	997.62 cc
Engine Cooling:	Liquid
Compression Ratio:	11.4:1
Combustion Chamber Design:	Tumble Effect Design
Valves Per Cylinder:	4
Intake valves Per Cylinder:	2
Exhaust Valves Per Cylinder:	2
Bore x Stroke:	97 mm x 67.5 mm
Claimed Peak Horsepower (Crankshaft):	128 bhp @ 9500 rpm
Claimed Peak Torque:	74 lbs.-ft. @ 7000 rpm
Measured Peak Horsepower:	N.A.
Measured Peak Torque:	N.A.
Claimed Power To Weight Ratio:	3.45 pounds per horsepower
Engine Redline:	10,500 rpm
Valve Angle (Included):	15.0 degrees Intake/ 14.5 degrees Exhaust (29.5 degrees)
Combustion Chamber Volume:	47.96 cc
Valvetrain Type:	DOHC, Gear and Roller-chain, Bucket Followers, Shim-under-bucket Lash Adjustment
Valve Adjustment Interval:	9300 miles
Intake Valve Diameter:	36.0 mm
Exhaust Valve Diameter:	32.0 mm
Intake Valve Stem Diameter:	6.0 mm
Exhaust Valve Stem Diameter:	6.0 mm
Intake Valve Maximum Lift:	10.7 mm
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Intake Valve Timing:	Open BTDC: 20 degrees Closed ABDC: 62 degrees Duration: 262 degrees
Exhaust Valve Timing:	Open BTDC: 64 degrees Closed ABDC: 15 degrees Duration: 259 degrees
Valve Timing Measurement Point:	1.0 mm
Fuel Delivery System:	Nippon Denso Fuel Injection
Throttle Body Venturi Size:	51 mm
Air Filter Type:	Pleated Paper
Exhaust System Type:	Two-into-one
Ignition System:	Digital Electronic, Two Spark Plugs Per Cylinder
Lubrication System:	Dry Sump
Oil Capacity:	4.2 quarts (4.0 liters)
Fuel Capacity:	4.7 gallons (18 liters)
Transmission Type:	6-speed, Constant Mesh
Clutch Type:	Multi-plate, Wet
Clutch Actuation System:	Hydraulic
Clutch Spring Type:	Coil
Number Of Clutch Springs:	6
Number Of Clutch Plates:	19
Drive Plates:	9
Driven Plates:	10
Primary Drive:	Gear (straight-cut)
Primary Drive Gear Teeth (Ratio):	60/31 (1.935:1)
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Wheelbase:	55.7 inches (1415 mm)
Seat Height:	32.3 inches (820 mm)
Footpeg Height:	15.0 inches (380 mm)
Handlebar Height:	33.1 inches (840 mm)
Steering Stem to Seat Center:	29.9 inches (760 mm)
Front Forks:	Ohlins Inverted, Cartridge
Fork Tube Diameter:	43 mm
Fork Adjustments:	Rebound Damping: 2.0-Turn Range Compression Damping: 2.0-Turn Range Spring Preload: 15 mm Range
Front Wheel Travel:	4.7 inches (120 mm)
Rear Wheel Travel:	5.3 inches (135 mm)
Rear Suspension Type:	Sachs-Boge Single Shock, With Piggyback Reservoir, With Linkage
Rear Shock Adjustments:	Rebound Damping: 20 Positions (Clicks) Compression Damping: 12 Positions (Clicks) Spring Preload: 13 mm Range
Front Brakes:	320 mm (12.6-inch) Dual Discs, 4-piston Brembo Calipers
Rear Brake:	220 mm (8.7-inch) Disc, Twin-piston Brembo Caliper
Front Wheel:	3.50 x 17.0-inch Cast Aluminum Alloy
Rear Wheel:	6.00 x 17.0-inch Cast Aluminum Alloy
Front Tire:	120/70-ZR17 (120/65 optional) Dunlop D207 Radial
Rear Tire:	190/50-ZR17 (180/55 optional) Dunlop D207 Radial
Claimed Dry Weight:	407 pounds (185 kg)
Claimed Wet Weight:	441 pounds (200 kg)
Weight Distribution, Percent:	50.0F/50.0R
GVWR:	N.A.
Overall Length:	81.5 inches (2070 mm)
Overall Width:	28.5 inches (725 mm)
Overall Height:	46.1 inches (1170 mm)
Ground Clearance:	5.0 inches (127 mm)
Suggested Retail Price:	\$13,899

Aprilia's V-Twins Have The Racing Connection

By Chris Ulrich

Aprilia is serious about racing and it shows in the latest versions of the RSV Mille and RSV Mille R 60-degree V-Twins. For example, Aprilia engineers have used tricks learned in Grand Prix racing to improve the new for-sale production RSV Milles, which in turn will make the company's production-based World Superbike racebikes more competitive.

For the basic engineering and tech details of the RSV Mille, see *Roadracing World*, September, 1998; for basic tech details of the RSV Mille R, see *Roadracing World*, January, 2000.

The improvements to the 2001 RSV Mille and Mille R start with the aerodynamic package, specifically the front fairing. The four horizontal ridges originally used on the front of the fairing have been removed, and new vertical wings have been installed on the outside edges of the fairing, just ahead of the handlebars. The wings were developed in the wind tunnel and found to reduce turbulent airflow around the rider, and were first used on Valentino Rossi's 1999 works RSW250 Aprilia Grand Prix racebike. Adding them to the Mille models make them legal for World Superbike competition. Although they don't apply directly to racing applications, the windscreen, headlight and turn signal shapes have also been revised to improve the production model's aerodynamics.

The headlight carries new H7 halogen bulbs for the high beams and an H4 bulb for low beam. The instrument dash has new amber lighting and new graphics.



The Aprilia RSV Mille R in action at Homestead. Note enclosed tailsection and the vertical wing visible on the fairing nose, just ahead of the rider's left hand, as well as optional titanium racing exhaust system. Photo by Tom Riles.

The new enclosed tailsection on the Milles is smoother and sleeker, and looks more like the RSW250 seat as well. And according to the Aprilia engineers, the combination of the fairing

and seat changes have increased the top speed of the Mille models by about 4.0 kph (2.5 mph).

Engine cooling has been improved with changes to the upper fairing and the seat section. The exhaust vents in each side of the upper fairing have been enlarged to pull more air through the radiator and out of the fairing. New ventilated side panels (under the seat and behind the fuel tank) pull air out from underneath the nylon gas tank, helping to keep the tank, airbox and throttle bodies cooler. The gas tank itself is shorter, reducing the reach to the handlebars; it's made of rotationally molded nylon because it's easier to get the shape the engineers wanted and to keep weight down by using that material and process.

A redesigned airbox is larger in volume, yet lighter and shorter in height, allowing the fuel tank to be slightly lowered. The air filter is slightly shorter to fit in the shorter airbox.

Reducing the wall thickness of the aluminum used to make the exhaust silencer saved 1.5 kilograms (3.3 pounds) without affecting performance. The

Mille R test bikes at the intro were fitted with an optional titanium racing exhaust system.

The chassis has been changed from last year's model, with the engine positioned 5mm higher to center the mass and help turn-in. The swingarm pivot has been raised 3mm to increase rear traction; in theory the swingarm pivot being raised increases the swingarm downslope, which leads to increased traction. The rear of the frame has been redesigned to accommodate the changes in engine height and swingarm pivot, and the steering head angle has been changed from 24.5 degrees to 25 degrees, which keeps the weight distribution where the engineers wanted it despite the engine position and swingarm pivot location changes. The footpegs have been changed to help keep the rider's foot from slipping off, and the side stand attachment point has been raised to increase ground clearance.

Both versions of the Mille now use new Brembo Gold Series four-piston

.....
continued on page 66



Front view of the RSV Mille, showing headlight arrangement with two H7 high-beam bulbs and a single H4 low-beam bulb. GP-developed vertical wings (on each side of the nose) reduce turbulent airflow around the rider, increasing top speed. Photo by Tom Riles.

front calipers. Instead of using two pads like most other calipers, the new Brembo calipers use four separate sintered-metallic pads, one for each 34mm piston, with the backing plates linked above the friction material. The fully floating stainless steel front discs have a thinner pad contact area, which reduces weight. Both bikes have braided stainless steel brake lines.

The linkage on the rear shock has been changed on both models, with suspension settings changed to work with the new linkage.

The Mille R model has Ohlins suspension, (upside-down forks and piggyback shock), forged aluminum wheels,

stress, and the connecting rod big ends have been reshaped for the same reason. The main bearing clearance and balance shaft bearing clearance have been tightened up to reduce noise and vibration, and the oil flow inside the dry-sump engine has been modified to reduce mechanical power losses caused by oil drag and splash. The valve cover, cylinder head cam chain tunnel outer surface, cylinder cam chain tunnel outer surface and clutch cover have all been made more rigid, to reduce mechanical noise.

The force needed at the clutch lever—already relatively light thanks to Aprilia's pneumatically-assisted clutch system—has been reduced from 9 kg to 7 kg by changing the clutch spring preload 2mm. The clutch spring preload could be reduced without affect-



Reshaped, rounder-on-the-sides RSV Mille tailsection has turbulence-reducing ridges on its top. Taillight treatment is also new. Photo by Tom Riles.



Right-side view of Aprilia RSV Mille R, showing Ohlins forks and shock, forged-aluminum-alloy wheels, larger fairing side vents and new ventilated side panels (under the seat). Mille R comes with Pirelli tires. Photo by Tom Riles.

an Ohlins steering damper and various carbon fiber parts including the dash cover, front and rear fenders, ram air ducts, and the fairing wings. The Mille R is fitted with Pirelli Dragon Super Corsa tires, 120/70-ZR17 front and 180/55-ZR17 rear.

The standard Mille model uses Showa upside down forks that have new settings (specifically making the hydraulic bump stop more progressive under braking), and a fully-adjustable Sachs piggyback shock. According to the engineers, the new geometry makes the bike stable enough to eliminate the steering damper on the Mille. The wheels are cast aluminum, and carry Dunlop D207s, a 120/70-ZR17 front and a 190/50-ZR17 rear.

Several engine changes have been made to improve durability and reduce mechanical noise. The radius between the crankshaft flywheels and big-end journals has been increased to reduce

ing clutch grip thanks to new clutch plates from F.C.C., (there's that racing connection again) which have an increased coefficient of friction. The pressure plate's contact angle with the clutch plates has been reduced from 2 degrees to 0 degrees to work with the new plates and spring preload; the preload was reduced by using thinner washers under the springs.

Overall, the standard Mille is 4.0 kilograms (8.8 pounds) lighter for 2001, and the Mille R is 2.0 kilograms (4.4 pounds) lighter for 2001.

The standard Mille is available in devil-black/florescent-red, hot-red/black, and electric-blue/black color combinations and sells for \$13,899. The Mille R is available in devil-black/florescent-red with replica superbike graphics, or in flashy-yellow/black color schemes, and sells for \$17,299.

For riding impressions of the two versions of the Mille, see the Adventures Of A Racer column on page 87. **RW**



Right-side view of Aprilia RSV Mille, which has Showa forks, a Sachs rear shock, cast-aluminum-alloy wheels and Dunlop D207 tires. The standard Mille version comes without a steering damper but still weighs 9.0 pounds more than the Mille R version. Photo by Tom Riles.

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staffers declined to comment.

About two years ago, Scheibe told Harley-Davidson officials that the VR1000 was fatally flawed and could never win because it was a 60-degree V-Twin, and requested funding to develop a new 90-degree V-Twin engine, sources inside the team say. Aprilia's success with the 60-degree RSV Mille in the Superbike World Championship put Scheibe's argument to rest and damaged his credibility with the Harley-Davidson brass, the sources said.

Scheibe also raised eyebrows when he first took over the VR1000 project in 1993 and declined offers of help from established, well-known tuners involved with Harley-Davidson racing efforts. The way one grizzled, successful Harley builder told it, Scheibe asked him if he had a degree in mechanical engineering. When the tuner replied that he did not, Scheibe said he was not interested in working with him.

Participant registration for events at Daytona International Speedway has moved to a building on the north side of International Speedway Blvd./Highway 92, directly across from Speedway Gate 7. The new location is on Industrial Parkway between International Speedway Blvd. and Avenue B, in Building 1; the front of the actual building is painted bright red and there are signs on International Speedway Blvd. pointing to Registration and Credentials. A map detailing the location of the registration building was available on www.grand-am.com at presstime.

Pat McGuinn has been named Director of Operations at Sears Point Raceway in Sonoma, California, and will be responsible for on-track activities and major events. McGuinn joined the Sears Point staff as Construction Coordinator but was named to his new post after three months. McGuinn replaces Bob Brown, who left Sears Point to form his own company.

Kawasaki has recalled all 18,931 ZX-12R models sold worldwide, to check for a cracked fuel tank overflow pipe, which could cause a fuel leak and a resultant fire hazard. Kawasaki dealers will inspect the pipe and either replace the fuel tank or install a vibration damper, whichever is applicable, free of charge. At the same time, dealers will replace the defective fuel level sender unit on ZX-12R models with VIN numbers that end in A000001 through A011374. More information is available from Kawasaki dealers.

Team Valvoline EMGO Suzuki's John Hopkins, 17, finished third in the SFX Supercross Crossover Challenge presented by Suzuki on January 5 at Edison Field in Anaheim, California. The Crossover event brought 24 celebrities, athletes and non-motocross-professional-racers (like actor Mark Paul Gosselaar, World Champion surfer Sunny Garcia, and X Games skier Thom Cooley) together on identical Suzuki RM125s on the same Supercross track that hosted the opening round of the EA Sports Supercross series. Hopkins led most of the race but faded, tangled with a lapped rider and crashed near the end, and got up to finish third behind mountain bike racer (and motocross tuner) Randy Lawrence and marathoner Kevin Barda, with Robbie Van Winkle (aka Vanilla Ice) fourth.

Trans Logic Systems of Bournemouth,

England is set to introduce a new Power Shifter system which automatically makes transmission shifts at the touch of a handlebar-mounted button. The system is modeled after the steering-wheel-mounted paddle-shifter systems used in Formula One car racing, is expected to retail for about 599 English Pounds (about \$900 U.S.), and uses electric solenoids to move the shift shaft and make the shift in conjunction with a momentary ignition kill. In pre-season testing, Superbike teams which have tried the system have reported lap-time improvements of up to 0.5-second compared to conventional quick-shift systems, which kill the ignition when the shift lever is moved by the rider's foot. The system has been tested by Ducati teams in Europe and by Yoshimura Suzuki in the United States. Trans Logic Systems can be reached at 011-44-1202-304477, FAX 011-44-1202-304488, e-mail enquiries@translogicsystems.co.uk, www.translogicsystems.co.uk.

Pilot USA is now accepting rider resumes for the 2001 season, c/o Pilot Race Support, 13640 Imperial Hwy. Suite 5, Santa Fe Springs, CA 90670, FAX (562) 404-4809.

The racer now known as Jocelin collided with fellow racer Jodie York on the last lap of a the January 21 WSMC Formula Two race at Willow Springs Raceway, with York suffering a concussion and Jocelin suffering a dislocated and abraded finger.

Corrections: In the February, 2001 issue, the phone number for Erico Motorsports was listed incorrectly in a news item announcing that the shop has been named a Triumph dealer. The correct phone number is (303) 308-1811. In an advertisement in the January, 2001 issue, Armour Bodies Inc. listed Team Honda and Team Yoshimura Suzuki as using Armour bodywork. Armour has now issued a statement which read, in part, "We regret that any mis-information was due to circumstances beyond our control. We fully expect to service the mentioned teams and are in the works to finalize any further details. We at Armour Bodies Inc. apologize for any inconvenience..."

Clarification: Contrary to what our reporter was told during the GSX-R1000 press intro at Road Atlanta and included in his report in the February, 2001 issue, American Suzuki is importing the GSX-R1000 in the black/silver and blue/white color schemes. The red/black/silver color scheme will not be imported into the U.S..

American Honda Motor Co. founder Kihachiro Kawashima died December 25, 2000 in Japan, at age 81. Kawashima opened American Honda's first office in Los Angeles on June 11, 1959 and was running the company when the historic "You meet the nicest people on a Honda" ad campaign was established.

Racer Brett Ray and wife Patty of R and R Racing had a son, Brandon Lee Ray, August 15 in West Palm Beach, Florida. Soon after the birth, R and R Racing moved to 15942 Mine 25 Road, West Frankfort, IL 62896, (888) 782-7676 and began producing GSX-R750 bodywork in addition to bike stands and exhaust brackets; R and R will be at Daytona with a letter-cutting machine to produce logos, lettering and numbers for racers.

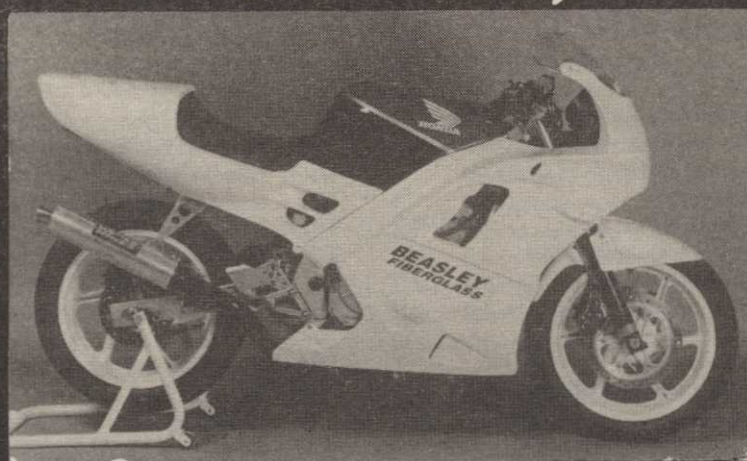
Former racer Sharon Earthman and husband Scotty Beach, (who is Crew Chief for Team Harley-Davidson's Pascal Picotte) had a son, Carl Hayes Beach, November 25 in Brookfield, Wisconsin.

Formula USA National Road Race Series Head Tech Inspector Dennis Fern and wife Maggie had a son, Dennis Wayne Fern III, December 21 in Fairfax, Virginia.

SFX Motor Sports Group Senior Director of Marketing Dan Krolezyk and wife Tara had a daughter, McKayla Marie Krolezyk, January 4 in Elk Grove Village, Illinois. **RW**

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	YCX (Soft)												
	YCY (Medium)												
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 6/1-3 Mugello, Italy
 6/15-17 Catalunya, Spain
 6/28-30 Assen, Holland
 7/6-8 Donington Park, Great Britain
 7/20-22 Sachsenring, Germany
 8/24-26 Brno, Czech Republic
 9/7-9 Estoril, Portugal
 9/21-23 Valencia, Spain
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 10/12-14 Phillip Island, Australia
 10/19-21 Sepang, Malaysia
 11/2-4 Rio, Brazil

For additional info, call FIM at 011-41-22-950-9500,
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 5/11-13 Monza, Italy
 5/25-27 Donington Park, Great Britain
 6/8-10 Lausitzring, Germany
 6/22-24 Misano, San Marino
 7/6-8 Laguna Seca, USA
 7/27-29 Brands Hatch, Great Britain
 9/7-9 Assen, Holland
 9/28-30 Imola, Italy
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 6/8-10 Road America, Elkhart Lake, WI
 6/15-17 New Hampshire International Speedway, Loudon, NH
 7/6-8 Laguna Seca Raceway, Monterey, CA
 7/20-22 Mid-Ohio Sports Car Course, Lexington, OH
 7/27-29 Brainerd International Raceway, Brainerd, MN
 8/24-26 Pikes Peak International Raceway, Fountain, CO
 9/14-16 Willow Springs Raceway, Rosamond, CA
 9/28-30 Virginia International Raceway, Alton, VA
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Formula USA National Road Racing Series

2/28-3/4 Daytona Int'l. Speedway, Daytona Beach, FL
 4/19-22 Willow Springs Int'l. Raceway, Rosamond, CA
 6/28-7/1 Virginia Int'l. Raceway, Danville, VA
 8/23-26 Pocono Int'l. Raceway, Long Pond, PA
 9/6-9 Portland Int'l. Raceway, Portland, OR
 10/18-21 Daytona Int'l. Speedway, Daytona Beach, FL
 Other dates and locations TBA. For additional info, call (817) 332-4822, FAX (817) 870-9790, www.formulausea.com.

CCS California Region

3/10-11 Firebird Int'l. Raceway (East), Chandler, AZ
 4/7-8 Streets of Willow Springs, Rosamond, CA (TC)
 4/28-29 Thunderhill Park, Willows, CA
 5/26-27 Firebird Int'l. Raceway, Chandler, AZ
 6/2-3 Streets of Willow Springs, Rosamond, CA
 6/30-7/1 Buttonwillow Raceway, Buttonwillow, CA (TC)
 8/11-12 Thunderhill Park, Willows, CA (TC)
 9/1-2 Streets of Willow Springs, Rosamond, CA
 10/6-7 Thunderhill Park, Willows, CA
 11/10-11 Buttonwillow Raceway, Buttonwillow, CA
 12/1-2 Streets of Willow Springs, Rosamond, CA*
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 e-mail Kevin.Elliott@sfx.com, www.ccsracing.com.

CCS Florida Region

3/1-4 Daytona Int'l. Speedway, Daytona Beach, FL (Non-points TC)
 3/17-18 Moroso Motorsports Park, W. Palm Beach, FL
 4/7-8 Roebbing Road Raceway, Faulkville, GA
 4/21-22 Moroso Motorsports Park, W. Palm Beach, FL
 5/27-28 Moroso Motorsports Park, W. Palm Beach, FL
 6/9-10 Carolina Motorsports Park, Kershaw, SC (TC)
 6/23-24 Homestead Motorsports Complex, Homestead, FL
 7/21-22 Moroso Motorsports Park, W. Palm Beach, FL

8/11-12 Road Atlanta, Braselton, GA
 8/25-26 Moroso Motorsports Park, W. Palm Beach, FL
 9/1-2 Roebbing Road Raceway, Faulkville, GA (TC)
 9/22-23 Moroso Motorsports Park, W. Palm Beach, FL
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CCS Mid-Atlantic Region

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 4/14-15 Virginia Int'l. Raceway, Danville, VA
 5/5-6 Carolina Motorsports Park, Kershaw, SC
 5/12-13 Summit Point Raceway, Summit Point, WV*
 6/2-3 Rausch Creek Raceway, Harrisburg, PA
 6/23-24 Roebbing Road Raceway, Faulkville, GA
 7/7-8 Summit Point Raceway, Summit Point, WV
 7/14-15 Rausch Creek Raceway, Harrisburg, PA
 8/4-5 Virginia Int'l. Raceway, Danville, VA (TC)
 8/18-19 Rausch Creek Raceway, Harrisburg, PA
 9/8-9 Summit Point Raceway, Summit Point, WV
 9/22-23 Rausch Creek Raceway, Harrisburg, PA (TC)
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CCS Midwest Region

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 4/7-8 Blackhawk Farms Raceway, S. Beloit, IL
 4/27-29 Road America, Elkhart Lake, WI** (TC)
 5/19-20 Blackhawk Farms Raceway, S. Beloit, IL
 6/2-3 Blackhawk Farms Raceway, S. Beloit, IL
 6/9-10 Gateway Int'l. Raceway, Fairmont City, IL
 7/7-8 Blackhawk Farms Raceway, S. Beloit, IL
 7/21-22 Putnam Park Road Course, Mt. Meridian, IN
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 6/9-10 New Hampshire Int'l. Speedway, Loudon, NH
 7/7-8 New Hampshire Int'l. Speedway, Loudon, NH
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 8/11-12 Rausch Creek Raceway, Harrisburg, PA
 8/18-19 New Hampshire Int'l. Speedway, Loudon, NH
 9/1-2 New Hampshire Int'l. Speedway, Loudon, NH
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 3/31-4/1 Motorsports Ranch, Cresson, TX
 4/28-29 Texas World Speedway, College Station, TX
 6/1-3 Hallett Motor Racing Circuit, Hallett, OK
 6/23-24 Oak Hill Raceway, Henderson, TX
 7/21-22 Texas World Speedway, College Station, TX
 9/1-2 Motorsports Ranch, Cresson, TX
 9/29-30 Hallett Motor Racing Circuit, Hallett, OK
 10/27-28 Texas World Speedway, College Station, TX
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www.cmrracing.com.

CCS Southeast Region

3/1-4 Daytona Int'l. Speedway, Daytona Beach, FL* (Non-points TC)
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 3/31-4/1 Roebbing Road Raceway, Faulkville, GA
 4/14-15 Virginia Int'l. Raceway, Danville, VA
 5/5-6 Carolina Motorsports Park, Kershaw, SC
 5/26-27 Roebbing Road Raceway, Faulkville, GA
 6/9-10 Carolina Motorsports Park, Kershaw, SC (TC)
 6/23-24 Roebbing Road Raceway, Faulkville, GA
 7/21-22 Roebbing Road Raceway, Faulkville, GA
 8/4-5 Virginia Int'l. Raceway, Danville, VA (TC)
 8/11-12 Road Atlanta, Braselton, GA
 9/1-2 Roebbing Road Raceway, Faulkville, GA (TC)
 10/6-7 Virginia Int'l. Raceway, Danville, VA
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 5/5-6 Firebird Int'l. Raceway (East), Chandler, AZ
 5/26-27 Firebird Int'l. Raceway, Chandler, AZ
 6/30-7/1 Buttonwillow Raceway, Buttonwillow, CA (TC)
 9/1-2 Streets of Willow Springs, Rosamond, CA
 9/8-9 Firebird Int'l. Raceway (West), Chandler, AZ
 10/6-7 Firebird Int'l. Raceway, Chandler, AZ (TC)
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 8/12 Mid-Ohio Sports Car Course, Lexington, OH*
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WERA National Endurance Series

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 5/26 4hr Talladega Gran Prix Raceway, Talladega, AL
 6/2 6hr Putnam Park Road Course, Mt. Meridian, IN
 6/16 4hr Virginia International Raceway, Alton, VA
 6/30 6hr Portland International Raceway, Portland, OR
 8/4 6hr Summit Point Raceway, Summit Point, WV
 9/1 4hr Memphis Motorsports Park, Millington, TN
 9/8 4hr Rausch Creek Motorsports Park, Valley View, PA
 10/26 4hr GNF, Road Atlanta, Braselton, GA
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www.wera.com

WERA National Challenge Series

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 5/25-27 Talladega Gran Prix Raceway, Talladega, AL
 6/1-3 Putnam Park Road Course, Mt. Meridian, IN
 6/14-17 Cycle Jam, Virginia International, Danville, VA
 6/29-7/1 Portland International Raceway, Portland, OR
 8/3-5 Summit Point Raceway, Summit Point, WV
 8/31-9/2 Memphis Motorsports Park, Millington, TN
 9/7-9 Rausch Creek Motorsports Park, Valley View, PA
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 7/28-29 Nelson Ledges Road Course, Garrettsville, OH
 8/11-12 Putnam Park Road Course, Mt. Meridian, IN
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 6/9-10 Summit Point Raceway, Summit Point, WV
 6/14-17 WERA Cycle Jam, VIR, Danville, VA*
 6/23-24 Carolina Motorsports Park, Kershaw, SC
 7/7-8 Road Atlanta, Braselton, GA
 7/28-29 Nelson Ledges Road Course, Garrettsville, OH
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 5/12-13 Putnam Park Road Course, Mt. Meridian, IN
 6/14-17 WERA Cycle Jam, VIR, Danville, VA*
 7/14-15 Hallett Motor Racing Circuit, Hallett, OK
 8/11-12 Putnam Park Road Course, Mt. Meridian, IN
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 For additional info, call (770) 720-5010, FAX (770) 720-5015,
www.wera.com

WERA Southeast Region

3/24-25 Roebbing Road Raceway, Faulkville, GA
 4/14-15 Carolina Motorsports Park, Kershaw, SC
 4/28-29 Talladega Gran Prix Raceway - Talladega, AL
 6/9-10 Roebbing Road Raceway, Faulkville, GA
 6/14-17 WERA Cycle Jam, VIR, Danville, VA*
 6/23-24 Carolina Motorsports Park, Kershaw, SC
 7/7-8 Road Atlanta, Braselton, GA
 8/11-12 Roebbing Road Raceway, Faulkville, GA
 8/25-26 Talladega Gran Prix Raceway - Talladega, AL
 9/8-9 Carolina Motorsports Park, Kershaw, SC
 9/15-16 Roebbing Road Raceway, Faulkville, GA
 *Double Points
 For additional info, call (770) 720-5010, FAX (770) 720-5015,
www.wera.com

WERA South Central Region

3/30-4/1 Texas World Speedway, College Station, TX
 5/12-13 Texas Motor Speedway, Justin, TX
 6/2-3 Texas World Speedway, College Station, TX
 6/14-17 WERA Cycle Jam, VIR, Danville, VA*
 7/14-15 Hallett Motor Racing Circuit, Hallett, OK
 8/18-19 Texas World Speedway, College Station, TX
 9/14-16 Texas Motor Speedway, Justin, TX
 *Double Points
 For additional info, call (770) 720-5010, FAX (770) 720-5015,
www.wera.com

WSMC Series

2/17-18 Willow Springs Int'l. Raceway, Rosamond, CA
 3/17-18 Willow Springs Int'l. Raceway, Rosamond, CA
 4/14-15 Willow Springs Int'l. Raceway, Rosamond, CA
 5/19-20 Willow Springs Int'l. Raceway, Rosamond, CA
 6/16-17 Willow Springs Int'l. Raceway, Rosamond, CA
 7/14-15 Willow Springs Int'l. Raceway, Rosamond, CA
 8/18-19 Willow Springs Int'l. Raceway, Rosamond, CA
 9/8-9 Willow Springs Int'l. Raceway, Rosamond, CA
 10/20-21 Willow Springs Int'l. Raceway, Rosamond, CA
 11/17-18 Willow Springs Int'l. Raceway, Rosamond, CA
 12/15-16 Willow Springs Int'l. Raceway, Rosamond, CA
 For additional info, call (661) 256-1234, FAX (661) 256-1583,
 e-mail racewillow@aol.com, www.race-wsmc.com.

CMRRA Series (50-80cc)

3/4 Amago Raceway, Palomar, CA
 4/7-8 Willow Kart Track, Rosamond, CA

6/23 Las Vegas Karting Center, Sloan, NV
 7/21-22 Streets of Willow, Rosamond, CA*
 8/12 Adams Kart Track, Riverside, CA
 9/9 Adams Kart Track, Riverside, CA
 10/6-7 Willow Kart Track, Rosamond, CA
 11/4 Amago Raceway, Palomar, CA
 12/1-2 Willow Kart Track, Rosamond, CA
 *Includes Formula 3 125GP, RD 350/400, 500/650 Singles.
 For additional info, call CMRRA at (909) 674-5357, e-mail racemr-ra@aol.com, www.racemr-ra.com.

WERA National Vintage Series

3/1-2 Roebing Road Raceway, Faulkville, GA*
 3/10-11 Hallett Motor Racing Circuit, Hallett, OK
 4/7-8 Summit Point Raceway Summit Point, WV
 4/28-29 Talladega Gran Prix Raceway - Talladega, AL
 5/12-13 Texas Motor Speedway, Justin, TX
 5/12-13 Putnam Park Road Course, Mt. Meridian, IN
 5/26-27 Rausch Creek Raceway, Valley View, PA
 6/2-3 Texas World Speedway, College Station, TX
 6/9-10 Summit Point Raceway, Summit Point, WV*
 6/9-10 Roebing Road Raceway, Faulkville, GA
 6/23-24 Carolina Motorsports Park, Kershaw, SC
 6/30-1 Gingerman Raceway, South Haven, MI*
 7/7-8 Road Atlanta, Braselton, GA*
 7/14-15 Hallett Motor Racing Circuit, Hallett, OK
 7/28-29 Nelson Ledges Road Course, Garrettsville, OH
 8/11-12 Putnam Park Road Course, Mt. Meridian, IN*
 8/18-19 Texas World Speedway, College Station, TX
 8/18-19 Virginia Int'l Raceway, Danville, VA
 8/25-26 Talladega Gran Prix Raceway - Talladega, AL
 9/1-2 Nelson Ledges Road Course, Garrettsville, OH
 9/8-9 Carolina Motorsports Park, Kershaw, SC
 9/14-16 Texas Motor Speedway, Justin, TX*
 9/15-16 Roebing Road Raceway, Faulkville, GA
 9/22-23 Virginia Int'l Raceway, Danville, VA*
 10/23-28 GNF, Road Atlanta, Braselton, GA*

*Double Points

For additional info, call (770) 720-5010, FAX (770) 720-5015, www.wera.com

Parts Canada Superbike Championship

5/17-20 Shannonsville Motorsports Park, Shannonsville, ON
 6/7-10 Race City Motorsport Park, Calgary, AB
 6/16-17 Nampo Airport, Edmonton, AB
 7/5-8 Autodrome St-Eustache, St-Eustache, QC
 7/20-22 Mosport Int'l Raceway, Mosport, ON
 8/9-12 Atlantic Motorsport Park, Shubenacadie, NS
 8/30-2 Shannonsville Motorsports Park, Shannonsville, ON
 For additional info, call (416) 962-7223, www.cdnsuperbike.com.

FIM Endurance World Championship

4/15-16 24hr LeMans, France
 5-6 6hr Brno, Czech Republic
 6-9 6hr Brands Hatch, England
 7-1 Nurburgring, Germany
 7/14-15 24hr Spa Francorchamps, Belgium
 8-5 8hr Suzuka, Japan
 8/11-12 24hr Oschersleben, Germany
 9/15-16 24hr Bol d'Or, Magny Cours, France
 For additional info, call FIM at 011-41-22-950-9500, FAX 011-41-22-950-9501, e-mail fim@fim.ch, www.fim.ch.

FIM Supersport World Championship Series

3/9-11 Valencia, Spain
 4/20-22 Phillip Island, Australia
 4/27-29 Sugo, Japan
 5/11-13 Monza, Italy
 5/25-27 Donington Park, Great Britain
 6/8-10 Lausitzring, Germany
 6/22-24 Misano, San Marino
 8/3-5 Brands Hatch, Great Britain
 8/30-2 Oschersleben, Germany
 9/7-9 Assen, Holland
 9/28-30 Imola, Italy
 For additional info, call FIM at 011-41-22-950-9500, FAX 011-41-22-950-9501, e-mail fim@fim.ch, website www.fim.ch.

FIM European Superstock Championship Series

3/9-11 Valencia, Spain
 5/11-13 Monza, Italy
 5/25-27 Donington Park, Great Britain
 6/8-10 Lausitzring, Germany
 6/22-24 Misano, San Marino
 8/3-5 Brands Hatch, Great Britain
 8/30-2 Oschersleben, Germany
 9/7-9 Assen, Holland
 9/21-23 TBA
 9/28-30 Imola, Italy
 For additional info, call FIM at 011-41-22-950-9500, FAX 011-41-22-950-9501, e-mail: fim@fim.ch, website: www.fim.ch.

FIM Sidecar World Championship Series

3/9-11 Valencia, Spain

4/20-22 Phillip Island, Australia
 5/11-13 Monza, Italy
 5/25-27 Donington Park, Great Britain
 6/8-10 Lausitzring, Germany
 6/22-24 Misano, San Marino
 8/3-5 Brands Hatch, Great Britain
 8/30-2 Oschersleben, Germany
 9/7-9 Assen, Holland
 9/28-30 Imola, Italy
 For additional info, call FIM at 011-41-22-950-9500, FAX 011-41-22-950-9501, e-mail fim@fim.ch, website www.fim.ch.

FIM World Superbike & Supersport Winter Testing

2/18-19 Valencia, Spain
 For additional info, call FIM at 011-41-22-950-9500, FAX 011-41-22-950-9501, e-mail fim@fim.ch, www.fim.ch.

SCHOOLS AND PRACTICES

Team Hammer Advanced Riding Schools, Track Rides, Pro Practice

2/28 Daytona Int'l Spdw, Daytona Beach, FL (School, Ride) (F-USA)
 4/9 Willow Springs Raceway, Rosamond, CA (School, Ride, Practice) (F-USA)
 5/7 Road Atlanta, Braselton, GA (Ride) (AMA)
 6/28 Virginia Int'l Raceway, Danville, VA (School, Ride, Practice) (F-USA)
 7/26 Colonel's Brainerd Int'l Rwy, Brmerd, MN (Pro Practice) (AMA)
 8/23 Pocono Int'l Raceway, Long Pond, PA (School, Ride, Practice) (F-USA)
 9/6 Portland Int'l Raceway, Portland, OR (School, Ride, Practice) (F-USA)
 9/13 Willow Springs Raceway, Rosamond, CA (Pro Practice) (AMA)
 10/17 Daytona Int'l Spdw, Daytona Beach, FL (School, Ride) (F-USA)

Additional dates and locations TBA.

For additional info, call Team Hammer at (909) 245-6414, FAX (909) 245-6417, e-mail school@teamhammer.com, www.teamhammer.com.

Ed Bargy Racing School

1/14 Talladega Gran Prix Raceway, Talladega, AL
 1/20-21 Roebing Road Raceway, Faulkville, GA
 2/3-4 Talladega Gran Prix Raceway, Talladega, AL
 2/9 Talladega Gran Prix Raceway, Talladega, AL
 3/16 Gateway Int'l Raceway, Fairmont City, IL
 3/23 Roebing Road Raceway, Faulkville, GA
 4/13 Carolina Motorsports Park, Kershaw, SC
 4/27 Talladega Gran Prix Raceway, Talladega, AL
 5/25 Talladega Gran Prix Raceway, Talladega, AL
 6/8 Gateway Int'l Raceway, Fairmont City, IL
 6/22 Carolina Motorsports Park, Kershaw, SC
 8/10 Roebing Road Raceway, Faulkville, GA
 8/24 Talladega Gran Prix Raceway, Talladega, AL
 9/7 Carolina Motorsports Park, Kershaw, SC
 9/14 Roebing Road Raceway, Faulkville, GA
 10/5 Gateway Int'l Raceway, Fairmont City, IL
 11/3-4 Talladega Gran Prix Raceway, Talladega, AL
 12/1-2 Talladega Gran Prix Raceway, Talladega, AL
 For additional info, call (770) 745-7809, FAX (770) 739-4117, www.edbargyracingschool.com.

California Superbike School

3/20 Laguna Seca, Monterey, CA
 3/21 Laguna Seca, Monterey, CA
 3/24 Streets of Willow, Rosamond, CA
 3/25 Streets of Willow, Rosamond, CA
 3/28-29 Laguna Seca, Monterey, CA
 3/31-1 Streets of Willow, Rosamond, CA
 4/21 Laguna Seca, Monterey, CA
 4/22 Laguna Seca, Monterey, CA
 4/28 Streets of Willow, Rosamond, CA
 4/29 Streets of Willow, Rosamond, CA
 5/7 Sears Point Raceway, Sonoma, CA
 5/16 Virginia Int'l Raceway, Danville, VA
 5/17 Virginia Int'l Raceway, Danville, VA
 5/21 Pocono Raceway, Long Pond, PA
 5/22 Pocono Raceway, Long Pond, PA
 5/23-24 Pocono Raceway, Long Pond, PA
 5/28 Watkins Glen Int'l Raceway, Watkins Glen, NY
 5/29 Watkins Glen Int'l Raceway, Watkins Glen, NY
 6/5 Road America, Elkhart Lake, WI
 6/6 Road America, Elkhart Lake, WI
 6/12 Motorsports Ranch, Cresson, TX
 6/13 Motorsports Ranch, Cresson, TX
 6/14-15 Motorsports Ranch, Cresson, TX
 6/23 Streets of Willow, Rosamond, CA
 6/24 Streets of Willow, Rosamond, CA
 7/9-1 Laguna Seca, Monterey, CA
 7/17 Rausch Creek Raceway, Valley View, PA
 7/18 Rausch Creek Raceway, Valley View, PA
 7/23 Mid-Ohio Sports Car Course, Lexington, OH
 7/24 Mid-Ohio Sports Car Course, Lexington, OH
 7/26 Putnam Park Road Course, Mt. Meridian, IN
 7/27 Putnam Park Road Course, Mt. Meridian, IN
 8/27 Pikes Peak Int'l Raceway, Fountain, CO
 8/28 Pikes Peak Int'l Raceway, Fountain, CO
 9/6-7 Streets of Willow, Rosamond, CA

9/8 Streets of Willow, Rosamond, CA
 9/9 Streets of Willow, Rosamond, CA
 9/11 Sears Point Raceway, Sonoma, CA
 9/24 Watkins Glen Int'l Raceway, Watkins Glen, NY
 9/25 Watkins Glen Int'l Raceway, Watkins Glen, NY
 9/26-27 Watkins Glen Int'l Raceway, Watkins Glen, NY
 10/1 Virginia Int'l Raceway, Danville, VA
 10/2 Virginia Int'l Raceway, Danville, VA
 10/3-4 Virginia Int'l Raceway, Danville, VA
 10/8 Texas World Speedway, College Station, TX
 10/9 Texas World Speedway, College Station, TX
 10/27-28 Streets of Willow, Rosamond, CA
 11/3 Streets of Willow, Rosamond, CA
 11/4 Streets of Willow, Rosamond, CA
 11/TBA Laguna Seca, Monterey, CA
 For additional info, call (818) 841-7661, FAX (818) 841-7019, www.superbikeschool.com.

CLASS Motorcycle Schools

2/25 Santa Paula Airport, Santa Paula, CA
 3/15 Sears Point Raceway, Sonoma, CA
 3/23 Streets of Willow, Rosamond, CA
 3/27 Laguna Seca, Monterey, CA
 3/30 Laguna Seca, Monterey, CA
 4/20 Streets of Willow, Rosamond, CA
 4/27-28 Laguna Seca, Monterey, CA
 4/28 Laguna Seca, Monterey, CA
 4/30-1 Sears Point Raceway, Sonoma, CA
 5/2 Sears Point Raceway, Sonoma, CA
 5/11 Streets of Willow, Rosamond, CA
 6/23 Second Creek, Denver, CO
 6/11-12 Road America, Elkhart Lake, WI
 6/18 Grattan Raceway, Grattan, MI
 6/23-24 Rausch Creek, Harrisburg, PA
 6/25 Rausch Creek, Harrisburg, PA
 7/9-10 Mid-Ohio Sports Car Course, Lexington, OH
 7/23-24 Virginia Int'l Raceway, Alton, VA
 7/30-21 Road Atlanta, Braselton, GA
 8/5-18 Norway
 8/30-31 Seattle Int'l Raceway, Kent, WA
 9/3 Portland Int'l Raceway, Portland, OR
 9/17 Streets of Willow, Rosamond, CA
 10/15-16 Sears Point Raceway, Sonoma, CA
 10/16 Sears Point Raceway, Sonoma, CA
 10/25 Streets of Willow, Rosamond, CA
 10/26 Streets of Willow, Rosamond, CA
 11/1 Streets of Willow, Rosamond, CA
 11/2 Streets of Willow, Rosamond, CA
 For additional info, call (805) 933-9936, FAX (805) 933-9987, website: www.classrides.com.

Cornerspeed Racing School

3/19 Virginia Int'l Raceway (North Course), Danville, VA
 4/13 Virginia Int'l Raceway (North Course), Danville, VA
 5/TBA Virginia Int'l Raceway (North Course), Danville, VA
 6/30 Virginia Int'l Raceway (South Course), Danville, VA
 8/3 Virginia Int'l Raceway (North Course), Danville, VA
 8/17 Virginia Int'l Raceway (North Course), Danville, VA
 9/21 Virginia Int'l Raceway (North Course), Danville, VA
 9/26 Virginia Int'l Raceway (North Course), Danville, VA
 9/27 Virginia Int'l Raceway (South Course), Danville, VA
 10/5 Virginia Int'l Raceway (North Course), Danville, VA
 For additional info, call (704) 332-3147, FAX (704) 332-3140, e-mail 1fastguy@mindspring.com, www.cornerspeed.net.

Club PCS Open Track Days

3/3-4 Virginia Int'l Raceway (North Course), Danville, VA
 3/16-17 Roebing Road Raceway, Faulkville, GA
 4/20 Summit Point Raceway (Full Course), Summit Point, WV**
 5/21 Summit Point Raceway (Full Course), Summit Point, WV
 5/27-28 Talladega Gran Prix Raceway, Talladega, AL
 6/23-24 Summit Point Raceway (Jefferson Circuit), Summit Point, WV
 8/4-5 Virginia Int'l Raceway (South Course), Danville, VA
 9/22-23 Virginia Int'l Raceway (South Course), Danville, VA
 11/17-18 Virginia Int'l Raceway (North Course), Danville, VA
 11/24-25 Talladega Gran Prix Raceway, Talladega, AL
 **With Team Pro-Motion
 Additional Dates and locations TBA.
 For additional info, call (904) 451-9493, FAX (904) 253-3578, e-mail alchemy@pcsdlaytona.com, www.pcsdaytona.com/clubpcs.htm.

dP Safety School

3/5 Buttonwillow Raceway, Buttonwillow, CA
 3/19 Laguna Seca Raceway, Monterey, CA
 4/13 Sears Point Raceway, Sonoma, CA
 4/16 Laguna Seca Raceway, Monterey, CA
 5/7 Thunderhill Raceway, Willows, CA
 5/24 Laguna Seca Raceway, Monterey, CA
 6/11 Thunderhill Raceway, Willows, CA
 6/17 Laguna Seca Raceway, Monterey, CA
 7/10 Laguna Seca Raceway, Monterey, CA
 8/1 Seattle International Raceway, Kent, WA
 8/8 Portland International Raceway, Portland, OR
 8/17 Sears Point Raceway, Sonoma, CA

8/23 Laguna Seca Raceway, Monterey, CA
 9/24 Laguna Seca Raceway, Monterey, CA
 10/1 Thunderhill Raceway, Willows, CA
 10/15 Buttonwillow Raceway, Buttonwillow, CA
 11/13 Sears Point Raceway, Sonoma, CA
 11/19 Laguna Seca Raceway, Monterey, CA
 For additional info, call (805) 772-8301, FAX (805) 772-5929.

Fastrack Riders Track Days

2/16 Willow Springs Int. Raceway, Rosamond, CA
 3/16 Willow Springs Int. Raceway, Rosamond, CA
 4/6 Streets of Willow, Rosamond, CA
 4/13 Willow Springs Int. Raceway, Rosamond, CA
 5/18 Willow Springs Int. Raceway, Rosamond, CA
 6/1 Streets of Willow, Rosamond, CA
 6/15 Willow Springs Int. Raceway, Rosamond, CA
 7/13 Willow Springs Int. Raceway, Rosamond, CA
 8/17 Streets of Willow, Rosamond, CA
 8/31 Willow Springs Int. Raceway, Rosamond, CA
 9/7 Willow Springs Int. Raceway, Rosamond, CA
 10/19 Willow Springs Int. Raceway, Rosamond, CA
 11/16 Streets of Willow, Rosamond, CA
 11/30 Willow Springs Int. Raceway, Rosamond, CA
 12/14 Willow Springs Int. Raceway, Rosamond, CA
 For additional info, call (562) 699-2305.

FASTTRAX Racing School

4/27-28 Nelson Ledges Road Course, Garrettsville, OH
 6/22 Nelson Ledges Road Course, Garrettsville, OH
 7/19 Mid-Ohio Sports Car Course, Lexington, OH
 7/27 Nelson Ledges Road Course, Garrettsville, OH
 8/31 Nelson Ledges Road Course, Garrettsville, OH
 9/29 Nelson Ledges Road Course, Garrettsville, OH
 For additional info, call (330) 494-8410, FAX (330) 494-8398, e-mail rstanley@neo.r.com, www.fastone.com.

FASTTRAX Advanced Street Riders School

4/27 Nelson Ledges Road Course, Garrettsville, OH
 5/25-26 Nelson Ledges Road Course, Garrettsville, OH
 6/30 Nelson Ledges Road Course, Garrettsville, OH
 7/18 Mid-Ohio Sports Car Course, Lexington, OH
 8/11 Nelson Ledges Road Course, Garrettsville, OH
 9/8 Nelson Ledges Road Course, Garrettsville, OH
 9/28 Nelson Ledges Road Course, Garrettsville, OH
 For additional info, call (330) 494-8410, FAX (330) 494-8398, rstanley@neo.r.com, www.fastone.com.

Learning Curves Roadrace School

3/17 Gateway Int'l Rwy, Madison, IL
 3/31 Roebing Road, Faulkville, GA
 4/7 Blackhawk Farms, S. Beloit, IL
 4/7 Roebing Road, Faulkville, GA
 4/14 Virginia Int'l Rwy, Danville, VA
 4/27 Road America, Elkhart Lake, WI
 5/5 Carolina Int'l Rwy, Kershaw, SC
 5/5 Rausch Creek Raceway, Valley View, PA
 5/19 Blackhawk Farms, S. Beloit, IL
 5/28 Roebing Road, Faulkville, GA
 6/2 Blackhawk Farms, S. Beloit, IL
 6/2 Rausch Creek Raceway, Valley View, PA
 6/9 Gateway Int'l Rwy, Madison, IL
 6/9 Carolina Int'l Rwy, Kershaw, SC
 6/13 Road America, Elkhart Lake, WI
 6/23 Roebing Road, Faulkville, GA
 7/7 Blackhawk Farms, S. Beloit, IL
 7/14 Rausch Creek Raceway, Valley View, PA
 7/21 Rausch Creek Raceway, Valley View, PA
 7/21 Putnam Park Rwy, Mt. Meridian, IN
 7/21 Roebing Road, Faulkville, GA
 7/28 Gateway Int'l Rwy, Madison, IL
 8/4 Virginia Int'l Rwy, Danville, VA
 8/11 Rausch Creek Raceway, Valley View, PA
 8/11 Road America, Elkhart Lake, WI
 8/18 Rausch Creek Raceway, Valley View, PA
 8/25 Blackhawk Farms, S. Beloit, IL
 8/29 Blackhawk Farms, S. Beloit, IL
 9/1 Roebing Road, Faulkville, GA
 9/8 Blackhawk Farms, S. Beloit, IL
 9/22 Rausch Creek Raceway, Valley View, PA
 10/6 Gateway Int'l Rwy, Madison, IL
 10/6 Virginia Int'l Rwy, Danville, VA
 11/3 Carolina Int'l Rwy, Kershaw, SC
 For additional info, call (414) 327-0140, www.learningcurves.com

Midwest Track and Sport Riders

5/7 Blackhawk Farms, South Beloit, IL
 6/12 Blackhawk Farms, South Beloit, IL
 6/25 Gingerman Raceway, New Haven, Michigan
 7/12 Blackhawk Farms, South Beloit, IL
 8/13 Blackhawk Farms, South Beloit, IL

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Calendar

continued from page 69

9/13 Blackhawk Farms, South Beloit, IL

For additional info, call (815) 962-1284,
www.midwesttrackriders.org.

Pahrump Track Days

3/21 Pahrump, NV

4/6 Pahrump, NV

5/11 Pahrump, NV

For additional info, call Del Brown (801) 392-4019,
e-mail delbrown@uswest.net.

Penguin Racing School

4/27 New Hampshire Int'l Speedway, Loudon, NH

5/4 Rausch Creek Raceway, Harrisburg, PA

5/18 New Hampshire Int'l Speedway, Loudon, NH

5/22 New Hampshire Int'l Speedway, Loudon, NH**

6/8 New Hampshire Int'l Speedway, Loudon, NH

6/12-13 New Hampshire Int'l Speedway, Loudon, NH

7/6 New Hampshire Int'l Speedway, Loudon, NH

7/13 Mid-Ohio Sports Car Course, Lexington, OH

7/20 Rausch Creek Raceway, Harrisburg, PA

7/27 New Hampshire Int'l Speedway, Loudon, NH

8/10 Rausch Creek Raceway, Harrisburg, PA

8/17 New Hampshire Int'l Speedway, Loudon, NH

8/29 New Hampshire Int'l Speedway, Loudon, NH**

8/31 New Hampshire Int'l Speedway, Loudon, NH

9/16 Pocono Int'l Raceway, Long Pond, PA

9/26 New Hampshire Int'l Speedway, Loudon, NH**

9/28 New Hampshire Int'l Speedway, Loudon, NH

12/7 Homestead Motorsports Complex, Homestead, FL

**Street rider Track Day

For additional info, call (508) 339-4673, FAX (508) 339-5760.

STAR Motorcycle School

3/17-18 Firebird Int'l Raceway, Chandler, AZ

3/24-25 Spring Mountain Motorsports Park, Pahrump, NV

4/9-10 Buttonwillow Raceway, Buttonwillow, CA

4/23-24 Thunderhill Park, Willows, CA

4/28-29 Spring Mountain Motorsports Park, Pahrump, NV

5/14-15 Motorsport Ranch, Cresson, TX

6/4-5 Heartland Park, Topeka, KS

6/25-26 Putnam Park, Mt. Meridian, IN

8/6-7 Rausch Creek Motorsports Park, Harrisburg, PA

8/20-21 Gingerman Raceway, S. Haven, MI

8/27-28 Second Creek, Denver, CO

9/10-11 Virginia Int'l Raceway, Danville, VA

9/22-23 Carolina Motorsports Park, Kershaw, SC

10/4-5 Motorsport Ranch, Cresson, TX

10/15-16 Thunderhill Park, Willows, CA

10/22-23 Buttonwillow Raceway, Buttonwillow, CA

For additional info, call (805) 658-6333,

www.starmotorcycle.com.

Summit Point Practice Days

4/18 Summit Point Raceway, Summit Point, WV

5/11 Summit Point Raceway, Summit Point, WV

(MARRC Track Day)

7/5 Summit Point Raceway, Summit Point, WV

10/3 Summit Point Raceway, Summit Point, WV

For additional info, call Roger Lyle (301) 933-2599,

e-mail RogerLyle@erols.com, www.marrc.org.

T.E.A.M. Arizona's Track Time

2/17 Phoenix Int'l Raceway, Goodyear, AZ

3/25 Phoenix Int'l Raceway, Goodyear, AZ

4/28 Phoenix Int'l Raceway, Goodyear, AZ

5/26 Phoenix Int'l Raceway, Goodyear, AZ

For additional info, call (480) 998-9888, FAX (480) 860-1614,

e-mail info@motorcycletraining.com,

www.teamarizona.com/tracktime.html.

Team Pro-Motion

3/3-4 Virginia Int'l Raceway (North Course), Danville, VA

3/17-18 Carolina Motorsports Park, Kershaw, SC

4/14 Pocono Int'l Raceway (East Course), Long Pond, PA

4/22 Pocono Int'l Raceway (East Course), Long Pond, PA

5/4 Summit Point Raceway, Summit Point, WV

5/13 Pocono Int'l Raceway (East/North Course), Long Pond, PA

5/25 Rausch Creek Raceway (WEBA School), Valley View, PA

6/1 Rausch Creek Raceway (CCS School), Valley View, PA

6/3 Pocono Int'l Raceway (East Course), Long Pond, PA

6/23-24 Summit Point Raceway (Jefferson Course), Summit Point, WV

7/7-8 Mosport Int'l. Raceway, Mosport, Ontario, Canada

7/13 Rausch Creek Raceway (CCS School), Valley View, PA

7/27-28 Rausch Creek Raceway, Valley View, PA

8/4-5 Virginia Int'l Raceway (South Course), Danville, VA

8/17 Rausch Creek Raceway (CCS School), Valley View, PA

8/21 Pocono Int'l Raceway (F-USA Course), Long Pond, PA

9/1-2 Pocono Int'l Raceway (East Course), Long Pond, PA

9/6 Rausch Creek Raceway (School), Valley View, PA

9/15 Pocono Int'l Raceway (East Course), Long Pond, PA

9/20 Rausch Creek Raceway (CCS School), Valley View, PA

9/22-23 Virginia Int'l Raceway (South Course), Danville, VA

10/13 Pocono Int'l Raceway (North Course), Long Pond, PA

10/14 Pocono Int'l Raceway (East Course), Long Pond, PA

10/20-21 Rausch Creek Raceway, Valley View, PA

11/4 Summit Point Raceway (Jefferson Circuit), Summit Point, WV

11/5 Summit Point Raceway, Summit Point, WV

11/17-18 Virginia Int'l Raceway (North Course), Danville, VA

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8/20-21 Mead, CO

9/21-24 Spokane, WA

10/5-8 Santa Rosa, CA

10/19-22 Colton, CA

11/2-5 Harrington, DE

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2/13 Motoworld TV Show 6:30 p.m.

2/14 Motoworld TV Show (re-run) 5:30 a.m.

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2/24 Motoworld TV Show (re-run) 4:00 a.m.

2/27 Motoworld TV Show 6:00 p.m.

2/28 Motoworld TV Show (re-run) 3:00 a.m.

3/6 Motoworld TV Show 6:00 p.m.

3/7 Motoworld TV Show (re-run) 5:00 a.m.

3/13 Motoworld TV Show 6:00 p.m.

3/15 Motoworld TV Show (re-run) 5:30 a.m.

3/20 Motoworld TV Show 6:00 p.m.

3/24 Motoworld TV Show (re-run) 4:30 a.m.

3/27 Motoworld TV Show 6:30 p.m.

3/31 Motoworld TV Show (re-run) 5:30 a.m.

4/3 Motoworld TV Show 6:30 p.m.

4/6 Motoworld TV Show (re-run) 3:00 p.m.

4/10 Motoworld TV Show 6:00 p.m.

4/11 Motoworld TV Show (re-run) 1:30 p.m.

4/17 Motoworld TV Show 6:00 p.m.

4/18 Motoworld TV Show (re-run) 2:00 p.m.

4/24 Motoworld TV Show 6:00 p.m.

4/26 Motoworld TV Show (re-run) 5:30 a.m.

(All times Eastern)

Speedvision

3/11 World Superbike, Race 1, Barcelona, Spain 8:00 p.m. (SDD)

3/13 World Superbike, Race 2, Barcelona, Spain 8:00 p.m. (TD)

3/27 World Supersport, Barcelona, Spain 10:00 p.m. (TD)

4/1 World Superbike, Race 1, Johannesburg, S. Africa 8:00 p.m. (SDD)

4/3 World Superbike, Race 2, Johannesburg, S. Africa 8:00 p.m. (TD)

4/3 125cc GP Suzuka, Japan 10:00 p.m. (TD)

4/8 250cc GP Suzuka, Japan 6:00 p.m. (SDD)

4/8 500cc GP Suzuka, Japan 9:00 p.m. (SDD)

4/17 World Supersport, Johannesburg, S. Africa 9:00 p.m. (TD)

4/17 125cc GP Welkom, South Africa 10:00 p.m. (TD)

4/22 500cc GP Welkom, South Africa 9:00 p.m. (SDD)

4/22 250cc GP Welkom, South Africa 10:00 p.m. (SDD)

4/22 World Superbike, Race 1, Phillip Island, Aus. 10:00 p.m. (SDD)

4/24 125cc GP Jerez, Spain 10:00 p.m. (TD)

4/24 World Superbike, Race 2, Phillip Island, Aus. 10:00 p.m. (TD)

4/29 World Superbike, Race 1, Sugo, Japan 8:00 p.m. (SDD)

(SDD) - Same Day Delayed; (TD) - Tape Delayed.

(All times Eastern)

Warning!

Event dates and locations are subject to change by promoters and sanctioning bodies. Before you set out on a cross-country trek, verify the event date and location. That's why we list phone numbers for additional info.

RACING ORGANIZATIONS:

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LaVaughn Daniel (Apr RS250); 6. Jeff Rockett (Apr RS250).

SKORPIAN RACING OPEN MODIFIED PRODUCTION: 1. Jeremy Toye (Yam YZF-R1); 2. Bryan Kovarik (Yam YZF-R1); 3. Clinton Whitehouse III (Yam YZF-R1); 4. Chris Taylor (Yam YZF-R1); 5. Jason Curtis (Yam YZF-R1); 6. Chris Scott (Yam YZF-R1).

750cc MODIFIED PRODUCTION: 1. Ken Chase (Suz GSX-R750); 2. Richard Alexander (Suz GSX-R750); 3. Tony Meiring (Suz GSX-R750); 4. Chris Ulrich (Suz GSX-R750); 5. Jeff Hagan (Suz GSX-R750); 6. Les Wilson (Suz GSX-R750).

BARNETT CLUTCHES 600cc MODIFIED PRODUCTION: 1. Jason Pridmore (Suz GSX-R600); 2. Vincent Haskovec (Suz GSX-R600); 3. Matt Wait (Hon CBR600F4); 4. Mark Palazzo (Hon CBR600F4); 5. Robbie Dowie (Suz GSX-R600); 6. Jeffery Tigert (Hon CBR600F4).

500cc MODIFIED PRODUCTION: 1. Joe Hammond (Yam FZR400); 2. Joe Hylton (Yam FZR400); 3. Jeff Peplot (Yam FZR400); 4. Jodie York (Yam FZR400); 5. William Erwin (Yam FZR400); 6. Joe Pardo (Kawasaki EX500).

OPEN SUPERBIKE: 1. Vincent Haskovec (Suz GSX-R1100); 2. Chuck Graves (Yam YZF-R1); 3. Jeremy Toye (Yam YZF-R1); 4. Phil Herrin (Yam YZF-R1); 5. Bryan Kovarik (Yam YZF-R1); 6. Chad Jensen (Suz GSX-R750).

I & L MOTORSPORTS 750cc SUPERBIKE: 1. Ken Chase (Suz GSX-R750); 2. Richard Alexander (Suz GSX-R750); 3. Frank Aragaki (Kaw ZX-7R); 4. Jeff Stern (Suz GSX-R750); 5. Ed Milhausen (Suz GSX-R750); 6. Tony Meiring (Suz GSX-R750).

GRAVES MOTORSPORTS 650cc SUPERBIKE: 1. Jason Pridmore (Suz GSX-R600); 2. Mark Palazzo (Hon CBR600F4); 3. Chuck Graves (Yam YZF-R6); 4. Robbie Dowie (Suz GSX-R600); 5. Kenny Kopecky (Yam YZF-R6); 6. Owen Richey (Yam YZF-R6).

WOOD-EASE 550cc SUPERBIKE: 1. Brian Long (Suz SV650); 2. Michael Solis (Suz SV650); 3. Darren Fulce (Yam FZR400); 4. Andre Castanos (Apr RS250); 5. Joe Hylton (Yam FZR400); 6. LaVaughn Daniel (Apr RS250).

HYPERCYCLE FORMULA TWO GRAND PRIX: 1. Vincent Haskovec (Suz GSX-R600); 2. Jason Pridmore (Suz GSX-R600); 3. Jacob West (Yam YZF-R6); 4. Jason DiSalvo (Hon RS250); 5. Mark Palazzo (Hon CBR600); 6. Chuck Graves (Yam YZF-R6).

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FORMULA 40 LIGHTWEIGHT: 1. Kenny Kopecky (Yam YZF-R6); 2. Mark Watts (Hon RS250); 3. John Ulrich (Yam TZ250); 4. Tom Sera (Yam TZ250); 5. Peter Ellis (Yam YZF-R6); 6. Jerry Jirkovsky (Hon CBR600F3).

FORMULA 50: 1. David Molitor (Yam YZF-R1); 2. Thomas Eviston (Suz); 3. Ramey Petcolas-Stroud (Tigcraft).

HEAVYWEIGHT TWINS: 1. Michael Castro (Suz); 2. Clint Milteer (Suz); 3. John Bancroft (Hon RC51); 4. Dave Campbell (BMW R1100S); 5. Rich Thorwaldson (Hon VTR1000); 6. Scot Dormier (Duc).

MIDDLEWEIGHT TWINS: 1. Brian Long (Suz SV650); 2. Michael Solis (Suz SV650); 3. Jody Hendley (H-D); 4. Scot Dormier (Duc); 5. Mark Loveland (Duc); 6. Dave Campbell (BMW R1100S).

LIGHTWEIGHT TWINS: 1. Darren Fulce (Yam); 2. Robert Erickson (Kaw EX500); 3. Evans Brasfield (Kaw EX500); 4. Kevin Jump (MZ); 5. Jeff Dixon (Kaw); 6. Larry Cochran (Hon).

FORMULA SINGLES: 1. Kevin Jump (MuZ); 2. Lloyd Johnson (Duc); 3. Larry Cochran (Hon); 4. Ramey Petcolas-Stroud (Tigcraft); 5. Jeff Rheume (Suz); 6. Allan Webster (Hus).

660cc SINGLES: 1. Kevin Jump (MuZ); 2. Allan Webster (Hus); 3. Jeffery Law (Nort).

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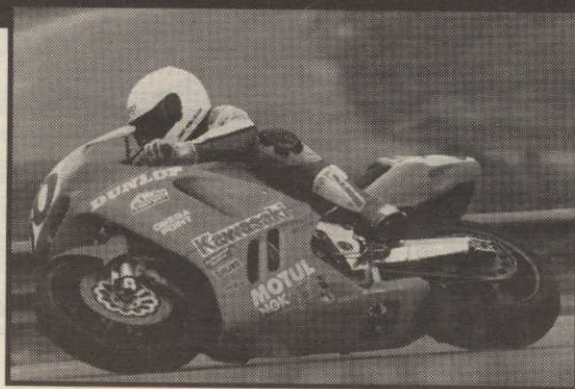
VINTAGE LIGHTWEIGHT DINOSAURS: 1. Craig Beecher (Yam); 2. Larry Cochran (Hon); 3. Aaron Barry (Yam); 4. Danny Farnsworth (Hon).

LIGHTWEIGHT NOVICE: 1. Tim Knutson (Apr); 2. Charlie Hewett (Apr); 3. Scott Cleff (Hon); 4. Skye Girard (Yam); 5. Dan MacDonald (Apr); 6. Richard Serne (Hon).

MIDDLEWEIGHT NOVICE: 1. Frank Norton (Suz); 2. Jim Van Beek (Yam); 3. Josh Gooding (Suz); 4. Michael True (Yam); 5. Alex Peabody (Suz); 6. John Bodenschatz (Suz).

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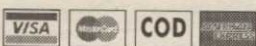
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Specifications: 2001 Suzuki GSX-R600

Engine Configuration	Inline Four, 4-stroke, DOHC
Engine Displacement	599 cc
Engine Cooling System	Liquid
Compression Ratio	12.2:1
Combustion Chamber Design	Twin Swirl
Valves Per Cylinder	4
Intake Valves Per Cylinder	2
Exhaust Valves Per Cylinder	2
Bore x Stroke	67.0 x 42.5 mm
Claimed Peak Horsepower	N.A.
Claimed Peak Torque	N.A.
Measured Peak Horsepower	101.2 bhp @ 13,400 rpm
Measured Peak Torque	45.1 lbs.-ft. @ 10,800 rpm
Measured Power To Weight Ratio	4.2 pounds per horsepower
Engine Redline	14,500 rpm
Valve Angle (Included)	13 degrees Intake, 15 degrees Exhaust (28 degrees)
Combustion Chamber Volume	13.4 cc
Valve Train Type	DOHC, Link-plate Chain Drive, Bucket Followers, Shim-under-bucket Lash Adjustments.
Valve Adjustment Interval	15,000 miles
Intake Valve Diameter	27.2 mm
Exhaust Valve Diameter	22.0 mm
Intake Valve Stem Diameter	4.0 mm
Exhaust Valve Stem Diameter	4.0 mm
Intake Valve Maximum Lift	8.6 mm
Exhaust Valve Maximum Lift	7.3 mm
Intake Valve Timing	Open BTDC: 33 degrees Close ABDC: 68 degrees Duration: 281 degrees
Exhaust Valve Timing	Open BBDC: 53 degrees Close ATDC: 30 degrees Duration: 263 degrees
Valve Timing Measuring Point	0.3 mm
Fuel Delivery System	Keihin Fuel Injection
Throttle Body Venturi Size	38 mm
Air Filter Type	Non-woven Pleated Fabric
Exhaust System Type	Four-into-one
Ignition System	Digital Electronic
Lubrication System	Wet Sump
Oil Capacity	3.2 quarts (3.0 liters)
Fuel Capacity	4.8 gallons (18 liters)
Transmission Type	6-speed, Constant Mesh
Clutch Type	Multi-plate, Wet
Clutch Actuation System	Cable
Clutch Spring Type	Coil
Number Of Clutch Springs	5
Number Of Clutch Plates	17
Drive Plates	9
Driven Plates	8
Primary Drive	Gear
Primary Drive Gear Teeth (Ratio)	41/79 (1.926:1)
Final Drive Sprocket Teeth (Ratio)	16/45 (2.812:1)
Transmission Gear Teeth (Ratios)	6th: 25/23 (1.086:1) 5th: 29/24 (1.208:1) 4th: 30/22 (1.363:1) 3rd: 32/20 (1.600:1) 2nd: 32/16 (2.000:1) 1st: 39/14 (2.785:1)
Transmission Overall Ratios	6th: 5.890:1 5th: 6.548:1 4th: 7.389:1 3rd: 8.670:1 2nd: 10.832:1 1st: 15.083:1
Theoretical Speed In Gears At Redline	6th: 181 mph 5th: 163 mph 4th: 144 mph 3rd: 123 mph 2nd: 99 mph 1st: 71 mph
Engine Speed At 60 mph	4800 rpm
Frame Design (Material)	Perimeter Twin-Spar (Aluminum Alloy)
Rake/Trail	24.0 degrees/3.78 inches (96 mm)
Wheelbase	55.1 inches (1400 mm)
Seat Height	32.7 inches (830 mm)
Footpeg Height	15.6 inches (395 mm)
Handlebar Height	34.3 inches (870 mm)
Steering Stem to Seat Center	29.9 inches (760 mm)
Front Forks	Showa Conventional, Cartridge
Fork Tube Diameter	45 mm
Fork Adjustments	Rebound Damping: 2.5-tum Range Compression Damping: 2.5-tum Range Spring Preload: 19 mm Range
Front Wheel Travel	4.9 inches (125 mm)
Rear Wheel Travel	5.1 inches (130 mm)
Rear Suspension Type	Showa Single Shock, With Linkage
Rear Shock Adjustments	Rebound Damping: 2.5-tum Range Compression Damping: 2.5-tum Range Spring Preload: 30 mm Range
Front Brakes	320 mm (12.6-inch) Floating Dual Discs, Tokico 4-piston Calipers
Rear Brake	220 mm (8.7-inch) Disc, Tokico Twin-piston Caliper
Front Wheel	3.50 x 17-inch Cast Aluminum Alloy
Rear Wheel	5.50 x 17-inch Cast Aluminum Alloy
Front Tire	120/70-17 Dunlop D207 Radial
Rear Tire	180/55-17 Dunlop D207 Radial
Claimed Dry Weight	359 pounds (163 kg)
Claimed Wet Weight	N.A.
Measured Wet Weight (Full Tank)	424 pounds (192 kg)
Measured Wet Weight (Empty Tank)	395 pounds (179 kg)
Weight Distribution, Percent	50.9F/49.1R
GVWR	840 pounds (381 kg)
Overall Length	80.3 inches (2040 mm)
Overall Width	28.1 inches (715 mm)
Overall Height	44.7 inches (1135 mm)
Ground Clearance	5.1 inches (130 mm)
Suggested Retail Price	\$7999

Specifications 2001 Yamaha YZF-R6

Engine Configuration	Inline Four, 4-stroke, DOHC
Engine Displacement	599 cc
Engine Cooling	Liquid
Compression Ratio	12.4:1
Combustion Chamber Design	Pentroof
Valves Per Cylinder	4
Intake valves Per Cylinder	2
Exhaust Valves Per Cylinder	2
Bore x Stroke	65.5 mm x 44.5 mm
Claimed Peak Horsepower	118.2 bhp @ 12,000 rpm
Claimed Peak Torque	49.8 lbs.-ft. @ 11,500 rpm
Measured Peak Horsepower	98.1 bhp @ 12,500 rpm
Measured Peak Torque	42.6 lbs.-ft. @ 10,000 rpm
Measured Power To Weight Ratio	4.3 pounds per horsepower
Engine Redline	15,500 rpm
Valve Angle (Included)	14.0 degrees Intake/ 14.0 degrees Exhaust (28.0 degrees)
Combustion Chamber Volume	10.6 cc
Valvetrain Type	DOHC, Link-plate Chain Drive, Bucket Followers, Shim-under-bucket Lash Adjustments.
Valve Adjustment Interval	26,000 miles
Intake Valve Diameter	25.0 mm
Exhaust Valve Diameter	22.0 mm
Intake Valve Stem Diameter	4.0 mm
Exhaust Valve Stem Diameter	4.0 mm
Intake Valve Maximum Lift	7.9 mm
Exhaust Valve Maximum Lift	7.5 mm
Intake Valve Timing	Open BTDC: 41 degrees Closed ABDC: 71 degrees Duration: 292 degrees
Exhaust Valve Timing	Open BTDC: 66 degrees Closed ABDC: 34 degrees Duration: 280 degrees
Valve Timing Measurement Point	Intake: 0.15 mm; Exhaust: 0.25 mm
Fuel Delivery System	(4) Keihin CVR37 Flat-slide CV Carburetors
Throttle Body Venturi Size	36.5 mm
Air Filter Type	Wet Type Element
Exhaust System Type	Four-into-two-into-one
Ignition System	Digital Electric
Lubrication System	Wet Sump
Oil Capacity	3.7 quarts (3.5 liters)
Fuel Capacity	4.5 gallons (17 liters)
Transmission Type	6-speed, Constant Mesh
Clutch Type	Multi-plate, Wet
Clutch Actuation System	Cable
Clutch Spring Type	Coil
Number Of Clutch Springs	6
Number Of Clutch Plates	16
Drive Plates	8
Driven Plates	8
Primary Drive	Gear
Primary Drive Gear Teeth (Ratio)	44/86 (1.955:1)
Final Drive Sprocket Teeth (Ratio)	16/48 (3.000:1)
Transmission Gear Teeth (Ratios)	6th: 26/24 (1.083:1) 5th: 25/21 (1.190:1) 4th: 32/24 (1.333:1) 3rd: 28/18 (1.556:1) 2nd: 37/19 (1.947:1) 1st: 37/13 (2.846:1)
Transmission Overall Ratios	6th: 6.352:1 5th: 6.979:1 4th: 7.818:1 3rd: 9.126:1 2nd: 11.419:1 1st: 16.692:1
Theoretical Speed In Gears At Redline	6th: 177 mph 5th: 161 mph 4th: 144 mph 3rd: 123 mph 2nd: 98 mph 1st: 67 mph
Engine Speed At 60 mph	5300 rpm
Frame Design (Material)	Deltabox II, Perimeter Twin-Spar (Aluminum Alloy)
Rake/Trail	24.0 degrees/ 3.46 inches (81 mm)
Wheelbase	54.3 inches (1380 mm)
Seat Height	32.2 inches (820 mm)
Footpeg Height	14.3 inches (363 mm)
Handlebar Height	32.5 inches (826 mm)
Steering Stem to Seat Center	30.5 inches (775 mm)
Front Forks	Yamaha Conventional, Cartridge
Fork Tube Diameter	43 mm
Fork Adjustments	Rebound Damping: 9 Positions (clicks) Compression Damping: 10 Positions (clicks) Spring Preload: 15 mm Range
Front Wheel Travel	5.1 inches (130 mm)
Rear Wheel Travel	4.7 inches (120 mm)
Rear Suspension Type	Soqi Single Shock, With Linkage
Rear Shock Adjustments	Rebound Damping: 20 Positions (clicks) Compression Damping: 12 Positions (clicks) Spring Preload: 12 mm Range (9 Positions)
Front Brakes	296 mm (11.7-inch) Dual Discs, 4-piston Calipers
Rear Brake	220 mm (8.7-inch) Disc, Twin-piston Caliper
Front Wheel	3.50 x 17.0-inch Cast Aluminum Alloy
Rear Wheel	5.50 x 17.0-inch Cast Aluminum Alloy
Front Tire	120/70-17 Dunlop D207 Radial
Rear Tire	180/55-17 Dunlop D207 Radial
Claimed Dry Weight	368 pounds (167 kg)
Claimed Wet Weight	410 pounds (186 kg) / 412 pounds (187 kg) California
Measured Wet Weight (Full Tank)	425 pounds (193 kg)
Weight Distribution, Percent	50.0F/50.0R
GVWR	827 pounds (375 kg)
Overall Length	79.7 inches (2,024 mm)
Overall Width	27.2 inches (691 mm)
Overall Height	43.5 inches (1,105 mm)
Ground Clearance	5.3 inches (135 mm)
Suggested Retail Price	\$7999 std., \$8499 Champions Edition

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Specifications 2001 Honda CBR600F4i

Engine Configuration: Inline Four, 4-stroke, DOHC
 Engine Displacement: 599 cc
 Engine Cooling: Liquid
 Compression Ratio: 12.0:1
 Combustion Chamber Design: Pentroof
 Valves Per Cylinder: 4
 Intake Valves Per Cylinder: 2
 Exhaust Valves Per Cylinder: 2
 Bore x Stroke: 67 mm x 42.5 mm
 Claimed Peak Horsepower: 115 bhp @ 12,000 rpm
 Claimed Peak Torque: 47.5 lbs.-ft. @ 10,000 rpm
 Measured Peak Horsepower: 97.6 bhp @ 12,500 rpm
 Measured Peak Torque: 44.0 lbs.-ft. @ 10,000 rpm
 Measured Power To Weight Ratio: 4.5 pounds per horsepower
 Engine Redline: 14,200 rpm
 Valve Angle (Included): 11.5 degrees Intake/ 13.0 degrees Exhaust (24.5 degrees)

Combustion Chamber Volume: 9.2 cc
 Valvetrain Type: DOHC, Link-plate Chain Drive, Bucket Followers, Shim-under-bucket Lash Adjustments.

Valve Adjustment Interval: 16,000 miles
 Intake Valve Diameter: 26.5 mm
 Exhaust Valve Diameter: 23.0 mm
 Intake Valve Stem Diameter: 4.0 mm
 Exhaust Valve Stem Diameter: 4.0 mm
 Intake Valve Maximum Lift: 8.5 mm (6.5 mm California)
 Exhaust Valve Maximum Lift: 7.2 mm (6.5 mm California)
 Intake Valve Timing:
 Open BTDC: 22 degrees
 Closed ABDC: 43 degrees
 Duration: 245 degrees
 Exhaust Valve Timing:
 Open BTDC: 38 degrees
 Closed ABDC: 7 degrees
 Duration: 225 degrees
 Valve Timing Measurement Point: 1 mm

Fuel Delivery System: Keihin Fuel Injection

Throttle Body Venturi Size: 38 mm
 Air Filter Type: Pleated Fabric
 Exhaust System Type: Four-into-one
 Ignition System: Digital Electric
 Lubrication System: Wet Sump
 Oil Capacity: 3.9 quarts (3.7 liters)
 Fuel Capacity: 4.8 gallons (18 liters)
 Transmission Type: 6-speed, Constant Mesh
 Clutch Type: Multi-plate, Wet
 Clutch Actuation System: Cable
 Clutch Spring Type: Coil
 Number Of Clutch Springs: 5
 Number Of Clutch Plates: 15
 Drive Plates: 8
 Driven Plates: 7
 Primary Drive: Gear
 Primary Drive Gear Teeth (Ratio): 45/82 (1.822:1)
 Final Drive Sprocket Teeth (Ratio): 16/46 (2.875:1)
 Transmission Gear Teeth (Ratios):
 6th: 27/23 (1.173:1)
 5th: 28/22 (1.272:1)
 4th: 27/19 (1.421:1)
 3rd: 28/17 (1.647:1)
 2nd: 33/16 (2.062:1)
 1st: 34/12 (2.833:1)

Transmission Overall Ratios:

6th: 6.144:1
 5th: 6.663:1
 4th: 7.444:1
 3rd: 8.627:1
 2nd: 10.801:1
 1st: 14.840:1

Theoretical Speed In Gears At Redline:

6th: 171 mph
 5th: 157 mph
 4th: 141 mph
 3rd: 122 mph
 2nd: 97 mph
 1st: 70 mph

Engine Speed At 60 mph:

Frame Design (Material): Pro Frame, Perimeter Twin-Spar (Aluminum Alloy)

Rake/Trail: 24.0 degrees/ 3.8 inches (96 mm)

Wheelbase: 54.5 inches (1384 mm)

Seat Height: 31.7 inches (805 mm)

Footpeg Height: 14.5 inches (368 mm)

Handlebar Height: 34.5 inches (876 mm)

Steering Stem to Seat Center: 30.0 inches (762 mm)

Front Forks: Showa Conventional, Cartridge

Fork Tube Diameter: 43 mm

Fork Adjustments:

Rebound Damping: 2.25-turn Range

Compression Damping: 2.25-turn Range

Spring Preload: 15 mm Range

Front Wheel Travel: 4.7 inches (119 mm)

Rear Wheel Travel: 4.7 inches (119 mm)

Rear Suspension Type: Showa Single Shock, With Linkage

Rear Shock Adjustments:

Rebound Damping: 1.75-turn Range

Compression Damping: 2.25-turn Range

Spring Preload: 10 mm Range (7 Positions)

Front Brakes: 296 mm (11.7-inch) Dual Discs, 4-piston Calipers

Rear Brake: 220 mm (8.7-inch) Disc, Twin-piston Caliper

Front Wheel: 3.50 x 17.0-inch Cast Aluminum Alloy

Rear Wheel: 5.50 x 17.0-inch Cast Aluminum Alloy

Front Tire: 120/70-17 Michelin Pilot Sport Radial

Rear Tire: 180/55-17 Michelin Pilot Sport Radial

Claimed Dry Weight: 370 pounds (168 kg)

Claimed Wet Weight: N.A.

Measured Wet Weight (Full Tank): 437 pounds (198 kg)

Weight Distribution, Percent: 50.2F/49.8R

GVWR: 734 pounds (333 kg)

Overall Length: 81.3 inches (2065 mm)

Overall Width: 27.0 inches (685 mm)

Overall Height: 44.7 inches (1135 mm)

Ground Clearance: 5.3 inches (135 mm)

Suggested Retail Price: \$8199

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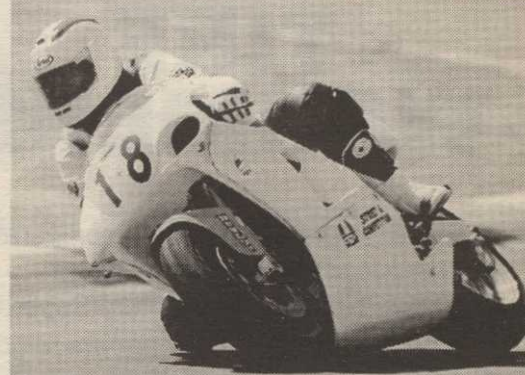
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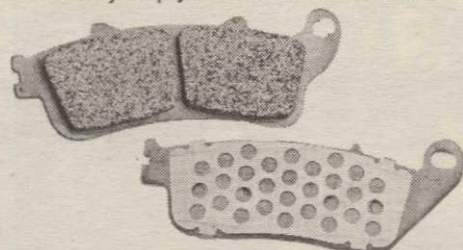
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Specifications 2001 Suzuki GSX-R1000

Engine Configuration:	Inline Four, 4-stroke, DOHC
Engine Displacement:	988 cc
Engine Cooling:	Liquid
Compression Ratio:	12.0:1
Combustion Chamber Design:	Pentroof
Valves Per Cylinder:	4
Intake Valves Per Cylinder:	2
Valves Per Cylinder:	2
Bore x Stroke:	73 mm x 59 mm
Claimed Peak Horsepower (Crankshaft):	165 bhp @ 10,500 rpm
Claimed Peak Torque:	N.A.
Measured Peak Horsepower:	144.9 bhp @ 10,600 rpm
Measured Peak Torque:	76.5 lbs.-ft. @ 8,100 rpm
Measured Power To Weight Ratio:	3.01 pounds per horsepower
Engine Redline:	12,250 rpm
Valve Angle (Included):	12.0 degrees Intake/ 13.0 degrees exhaust (25.0 degrees)

Combustion Chamber Volume:	22.4 cc
Valvetrain Type:	DOHC, Link-plate Chain Drive, Bucket Followers, Shim-under-bucket Lash Adjustments.

Valve Adjustment Interval:	15,000 miles
Intake Valve Diameter:	29.0 mm
Exhaust Valve Diameter:	24.0 mm
Intake Valve Stem Diameter:	4.0 mm
Exhaust Valve Stem Diameter:	4.0 mm
Intake Valve Maximum Lift:	9.0 mm
Exhaust Valve Maximum Lift:	8.0 mm

Intake Valve Timing:	
Open BTDC:	37 degrees
Closed ABDC:	72 degrees
Duration:	289 degrees

Exhaust Valve Timing:	
Open BTDC:	52 degrees
Closed ABDC:	34 degrees
Duration:	266 degrees

Valve Timing Measurement Point:	0.3 mm
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Fuel Delivery System:	Keihin Fuel Injection
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Throttle Body Venturi Size:	42 mm
Air Filter Type:	Non-woven Pleated Fabric
Exhaust System Type:	Four-into-two-into-one with SETV
Ignition System:	Digital Electronic
Lubrication System:	Wet Sump
Oil Capacity:	3.8 quarts (3.6 liters)
Fuel Capacity:	4.8 gallons (18 liters)
Transmission Type:	6-speed, Constant Mesh
Clutch Type:	Multi-plate, Wet

Clutch Actuation System:	Cable
Clutch Spring Type:	Coil
Number Of Clutch Springs:	5
Number Of Clutch Plates:	19
Drive Plates:	10
Driven Plates:	9
Primary Drive:	Gear (straight-cut)
Primary Drive Gear Teeth (Ratio):	73/47 (1.553:1)
Final Drive Sprocket Teeth (Ratio):	42/17 (2.470:1)
Transmission Gear Teeth (Ratios):	

6th:	29/24 (1.208:1)
5th:	30/23 (1.304:1)
4th:	29/20 (1.450:1)
3rd:	37/22 (1.681:1)
2nd:	39/19 (2.052:1)
1st:	43/16 (2.687:1)

Transmission Overall Ratios:	
6th:	4.636:1
5th:	5.005:1
4th:	5.564:1
3rd:	6.453:1
2nd:	7.876:1
1st:	10.312:1

Theoretical Speed In Gears At Redline:

6th:	194 mph
5th:	180 mph
4th:	162 mph
3rd:	140 mph
2nd:	114 mph
1st:	87 mph

Engine Speed At 60 mph:	3780 rpm
Frame Design (Material):	Perimeter Twin-spar (Aluminum Alloy)

Rake/Trail:	24.0 degrees/ 3.8 inches (96 mm)
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Wheelbase:	55.5 inches (1410 mm)
Seat Height:	32.7 inches (830 mm)
Footpeg Height:	15.6 inches (396 mm)
Handlebar Height:	32.6 inches (828 mm)
Steering Stem to Seat Center:	29.9 inches (759 mm)
Front Forks:	Kayaba Inverted, Cartridge
Fork Tube Diameter:	43 mm

Fork Adjustments:	
Rebound Damping:	14 positions (Clicks)
Compression Damping:	14 positions (Clicks)
Spring Preload:	10 mm Range
Front Wheel Travel:	4.7 inches (120 mm)
Rear Wheel Travel:	5.1 inches (130 mm)
Rear Suspension Type:	Kayaba Single Shock, With Linkage

Rear Shock Adjustments:	
Rebound Damping:	22 positions (Clicks)
Compression Damping:	22 positions (Clicks)
Spring Preload:	30 mm Range
Front Brakes:	320 mm (12.6-inch) Dual Discs, 6-piston Tokico Calipers

Rear Brake:	220 mm (8.7-inch) Disc, Twin-piston Tokico Caliper
Front Wheel:	3.50 x 17.0-inch Cast Aluminum Alloy

Rear Wheel:	6.00 x 17.0-inch Cast Aluminum Alloy
Front Tire:	120/70-ZR17 Bridgestone Battlax BT011 Radial

Rear Tire:	190/50-ZR17 Bridgestone Battlax BT010 Radial
Claimed Dry Weight:	375 pounds (170 kg)

Claimed Wet Weight:	430 pounds (195 kg)
Measured Wet Weight (Full Tank):	439 pounds (199 kg)
Weight Distribution, Percent:	51.7F/48.3R
GVWR:	827.0 pounds (375 kg)
Overall Length:	80.5 inches (2,045 mm)
Overall Width:	28.1 inches (714 mm)
Overall Height:	44.7 inches (1,135 mm)
Ground Clearance:	5.1 inches (130 mm)
Suggested Retail Price:	\$10,399

Specifications: 2000 Yamaha YZF-R1

Engine Configuration:	Inline Four, 4-stroke, DOHC
Engine Displacement:	998 cc
Engine Cooling System:	Liquid
Compression Ratio:	11.8:1
Combustion Chamber Design:	5-valve
Valves Per Cylinder:	5
Intake Valves Per Cylinder:	3
Exhaust Valves Per Cylinder:	2
Bore x Stroke:	74 x 58 mm
Claimed Peak Horsepower:	150 bhp @ 10,000 rpm
Claimed Peak Torque:	108 lbs.-ft. @ 8500 rpm
Measured Peak Horsepower:	124.6 bhp @ 9700 rpm
Measured Peak Torque:	71.1 lbs.-ft. @ 8700 rpm
Measured Power To Weight Ratio:	3.59 Pounds per horsepower
Engine Redline:	11,750 rpm
Valve Angle (Included):	Center Intake, 9.5 degrees; Outside Intakes, 16.75 degrees; exhaust, 11.5 degrees (28.25 degrees)

Combustion Chamber Volume:	14 cc
Valve Train Type:	DOHC, Link-plate Chain Drive, Bucket Followers, Shim-under-bucket Lash Adjustment

Valve Adjustment Interval:	26,600 miles
Intake Valve Diameter:	23.0 mm
Exhaust Valve Diameter:	24.5 mm
Intake Valve Stem Diameter:	3.9 mm
Exhaust Valve Stem Diameter:	4.4 mm
Intake Valve Maximum Lift:	7.35 mm
Exhaust Valve Maximum Lift:	7.75 mm

Intake Valve Timing:	
Open BTDC:	29 degrees
Close ABDC:	59 degrees
Duration:	268 degrees

Exhaust Valve Timing:	
Open BBDC:	60 degrees
Close ATDC:	36 degrees
Duration:	276 degrees

Valve Timing Measuring Point:	Intake, 0.15mm; Exhaust, 0.25mm
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Fuel Delivery System:	(4) Mikuni BDRS 40 CV Carburetors
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Throttle Body Venturi Size:	40mm
Air Filter Type:	Pleated Paper
Exhaust System Type:	Four-into-one with EXUP
Ignition System:	Digital Electronic
Lubrication System:	Wet Sump
Oil Capacity:	3.8 quarts (3.6 liters)
Fuel Capacity:	4.8 gallons (18 liters)
Transmission Type:	6-speed, Constant Mesh
Clutch Type:	Multi-plate, Wet

Clutch Actuation System:	Cable
Clutch Spring Type:	Diaphragm
Number Of Clutch Springs:	1
Number Of Clutch Plates:	15
Drive Plates:	8
Driven Plates:	7
Primary Drive:	Gear (straight-cut)
Primary Drive Gear Teeth (Ratio):	68/43 (1.581:1)
Final Drive Sprocket Teeth (Ratio):	43/16 (2.688:1)
Transmission Gear Teeth (Ratios):	

6th:	29/26 (1.115:1)
5th:	30/25 (1.200:1)
4th:	28/21 (1.333:1)
3rd:	30/20 (1.500:1)
2nd:	35/19 (1.842:1)
1st:	35/14 (2.500:1)

Transmission Overall Ratios:	
6th:	4.738:1
5th:	5.094:1
4th:	5.665:1
3rd:	6.375:1
2nd:	7.828:1
1st:	10.624:1

Theoretical Speed In Gears At Redline

6th:	180 mph
5th:	168 mph
4th:	151 mph
3rd:	134 mph
2nd:	109 mph
1st:	80 mph

Engine Speed At 60 mph:	3900 rpm
Frame Design (Material):	Deltabox II Perimeter Twin-spar (Aluminum Alloy)

Rake/Trail:	24.0 degrees/3.6 inches (92 mm)
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Wheelbase:	54.9 inches (1395 mm)
Seat Height:	32.1 inches (815 mm)
Footpeg Height:	14.7 inches (380 mm)
Handlebar Height:	32.0 inches (813 mm)
Steering Stem to Seat Center:	29.5 inches (750 mm)
Front Forks:	Kayaba Inverted, Cartridge
Fork Tube Diameter:	41mm

Fork Adjustments:	
Rebound Damping:	9 position (clicks)
Compression Damping:	16 positions (clicks)
Spring Preload:	16 mm Range
Front Wheel Travel:	5.3 inches (135 mm)
Rear Wheel Travel:	5.1 inches (130 mm)
Rear Suspension Type:	Sogei Single Shock, With Linkage

Rear Shock Adjustments:	
Rebound Damping:	11 positions (clicks)
Compression Damping:	12 positions (clicks)
Spring Preload:	9 mm Range
Front Brakes:	298 mm (11.7-inch) Dual Discs, 4-piston Nissin Calipers

Rear Brake:	245 mm (9.6-inch) Disc, Twin-piston Nissin Caliper
Front Wheel:	3.50 x 17-inch Cast Aluminum Alloy

Rear Wheel:	6.00 x 17-inch Cast Aluminum Alloy
Front Tire:	120/70-ZR17 Dunlop D207 Radial

Rear Tire:	190/50-ZR17 Dunlop D207 Radial
Claimed Dry Weight:	385 pounds (175 kg)

Claimed Wet Weight:	432 pounds (196 kg)
Measured Wet Weight (Full Tank):	447 pounds (203 kg)
Weight Distribution, Percent:	50.5 F/49.5 R
GVWR:	870.8 pounds (395 kg)
Overall Length:	80.1 inches (2035 mm)
Overall Width:	27.4 inches (695 mm)
Overall Height:	43.1 inches (1095 mm)
Ground Clearance:	5.5 inches (140 mm)
Suggested Retail Price:	\$10,299
Champions Edition:	\$10,799

Highly Recommended Products

By John Ulrich

Hang around motorcycle road racing for 25 years and you're bound to find some products related to racing that actually work as well as they're supposed to, if nothing else through the process of elimination. What follows is a selection of products that I have personally used and found excellent. This is not intended to be a definitive list of all the products in each category that work well—I tend to stick with a product once I find one I like. This is simply one long-time racer's personal list of some useful, racing-related products that get the job done, products that have earned my trust and respect.

Kawasaki GE2200A Generator

I've had this generator for five racing seasons, and it has been a trouble-free workhorse primarily used to run



Kawasaki GE2200A generator has proven reliable in five seasons of tire-warmer duty. Casters mounted on 2x4s and attached to bottom of generator made it easier to move; added pieces of foam pipe insulation keep metal generator frame rails from rubbing on inside walls of a box van or trailer. Photo by John Ulrich.

two sets of tire warmers in the pits. It's rated at 1900 watts and its air-cooled 171cc overhead valve engine will run for 10 hours after the 3.9-gallon tank is filled with pump gas or old race fuel, whatever is handy. It's gotten a once-a-year service, consisting of an oil change and an air-filter cleaning, and is still using the original spark plug without complaint.

It's easy to start, usually firing up on the first or second pull of the recoil starter, with some of the credit for that going to an automatic compression release system.

Features include solid state ignition and voltage regulator, a fuel-level sight gauge, a low-oil-level warning light (that's never seen action since the generator doesn't burn oil), a gear-dri-



Original heavy-duty Ancra tie-downs are still the best in terms of durability and sheer function. Photo by John Ulrich.



Close-up of original heavy-duty Ancra tie-down buckle. Combined with heavy strap material, the buckle makes the Ancra tie-down jam-resistant. Photo by John Ulrich.

ven cam, a reasonably-quiet muffler (sound output is rated at 67.5 dBA at 23 feet), a manual fuel petcock, a ball-bearing crankshaft and RFI noise suppression.

It weighs 95 pounds and measured about 21 inches long, 17 inches wide and 20 inches tall before we bolted on some 2x4s with attached casters to make it easier to load and move around.

The Kawasaki GE2200A sells for \$1150, from Kawasaki power products dealers.

Ancra Tie Downs

There are many different brands of tie downs, but no competitor yet has improved on the original Ancra heavy-

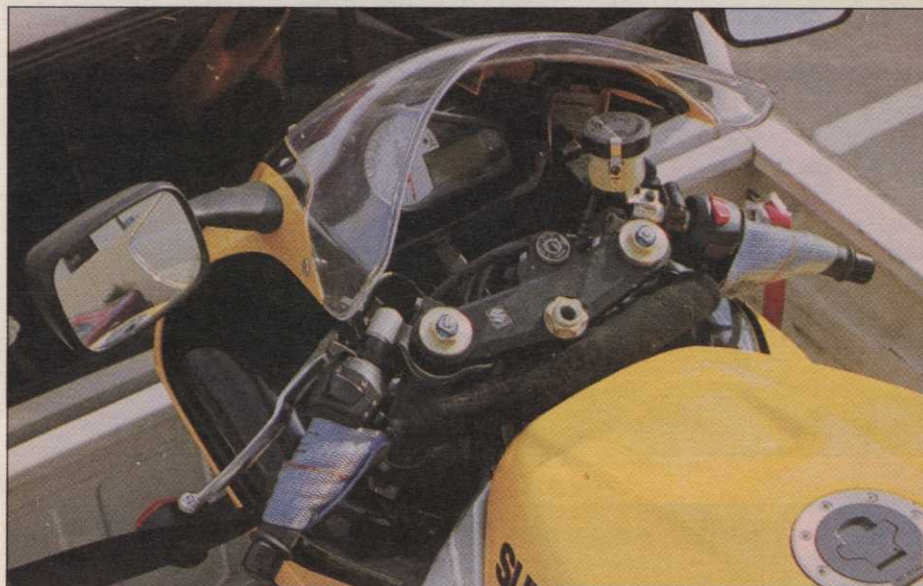


Ancra quick-release tie-down ring attaches to the floor of a box van, trailer or van. Photo by John Ulrich.

duty tie downs, which have the heaviest strap material; the strongest, most bend-resistant hooks with the most durable anti-scratch plastic coating; and the best-gripping, most corrosion-and-jam-resistant buckles. Ancra heavy duty tie downs sell for \$25.50 a pair and are available in red, black, lime green, turquoise, orange, olive drab, purple, teal and royal blue. Ancra also makes quick-release tie-down rings for installation on the floor of a truck or van bed or on the floor of a trailer. Like the tie downs, the tie-down rings and associated hardware are first-rate; a quick-release tie-down ring and mounting hardware (aka a bolt-on fitting kit) sells for \$16.50. Available from dealers, who can get more information from Ancra International, 4880 W. Rosecrans. Ave., Hawthorne, CA 90250, (800) 973-5092, e-mail egohata@ancra-llc.com, www.ancra-llc.com.

Canyon Dancer Bar Harness

The Canyon Dancer Bar Harness is the best invention related to secur-



Canyon Dancer Bar Harness fits over handlebar grips and attaches to tie downs. Cross-straps are surrounded by non-scratch fabric. Photo by John Ulrich.

ing sportbikes and racebikes in a truck or trailer since the original Ancra heavy-duty tie downs. The Bar Harness is easier and faster to use than soft ties and keeps tie-down hooks and buckles away from racebike bodywork, and comes in three color combinations, blue/black, red/black and black/black. I've used them on everything from small GP bikes to big street bikes, and they're great. As an indicator of the product's growing appeal, Canyon Dancer sold 2300 units in 1994, and 25,000 in 2000. A Bar Harness sells for \$29.95, from dealers, who can contact dis-

tributors or get more information from inventor Kent Stubbs at Canyon Dancer, 2040 Stonybrook Dr., Red Bluff, CA 96080, (530) 527-7926, e-mail Kent@canyondancer.com, www.canyondancer.com.

Black + Gray Plastic Wheel Chocks

Black + Gray Plastic Wheel Chocks have a low profile and won't bend large disc brake rotors like conventional steel hoop chocks can (and did on my Hayabusa), and are available with a clever quick-disconnect mounting system using Dzus fasteners. The optional quick-disconnect mounts can be installed entirely from above the wooden floor in a trailer or box van, eliminating the need to crawl around underneath the trailer or truck to install nuts on through-the-floor bolts. The instructions for installation are clear, simple and easy-to-follow, and the chocks have proven



Canyon Dancer Bar Harness is basically two self-adjusting straps, each with a cuff on one end and a tie-down loop on the other. The strap leading from the right bar cuff runs through the left bar cuff and down to the tie-down; the strap leading from the left bar cuff runs through the right bar cuff and down to the tie-down. Photo by John Ulrich.

convenient in the Roadracing World box van. They may be more difficult to install in the ribbed bed of a pickup truck, simple because the chock side flanges must rest on a flat surface, but for box van or trailer use they're hard to beat. The Black + Gray chocks are available in three widths, 4-inch for off-road and Vintage bikes, 6-inch for modern sportbikes and racebikes, and 8-inch for use by riders who want to tie their bike down rear-wheel first. The 4-inch chocks sell for \$52, the 6-inch chocks sell for \$56 and the 8-

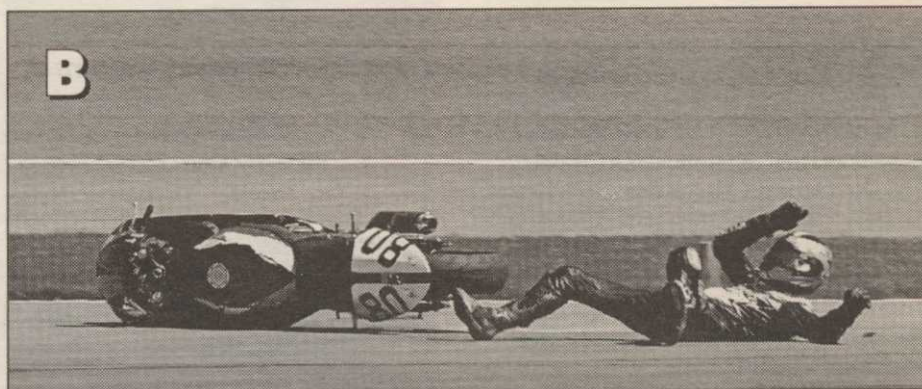
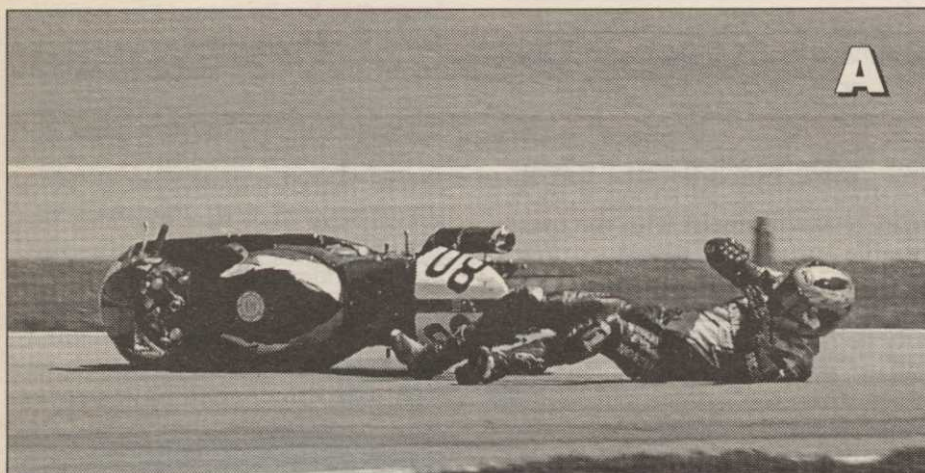
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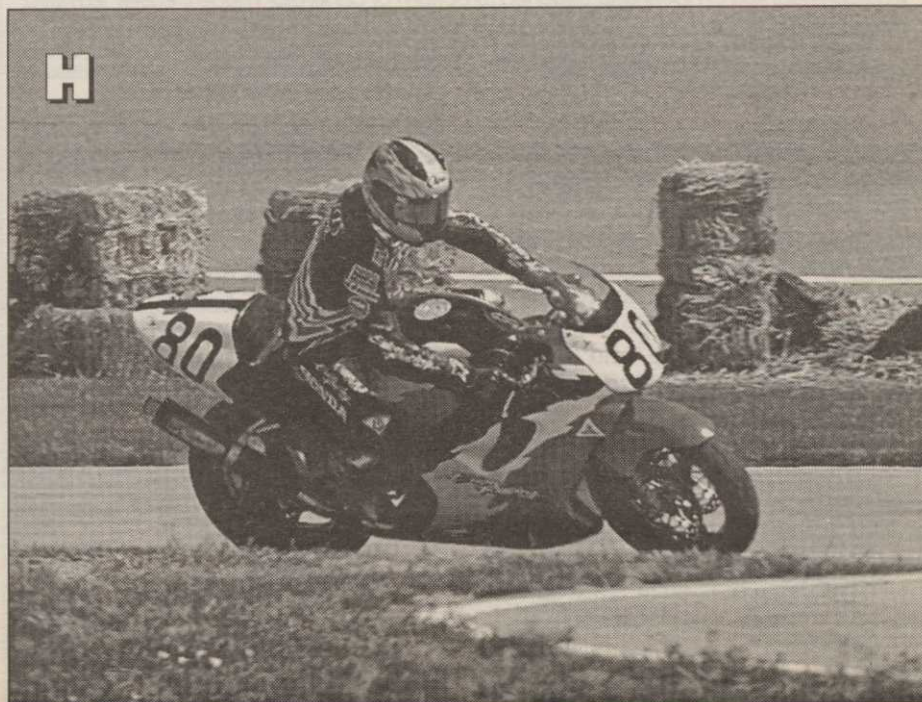
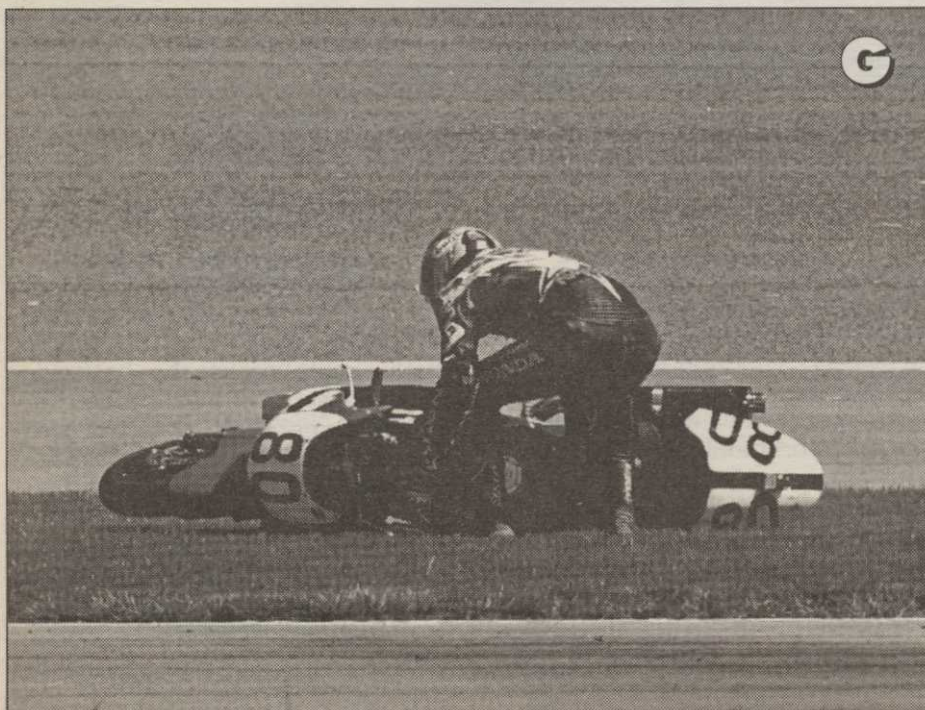
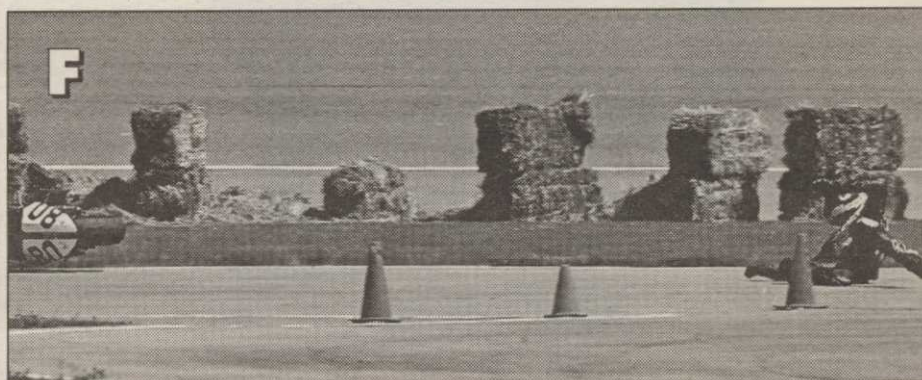
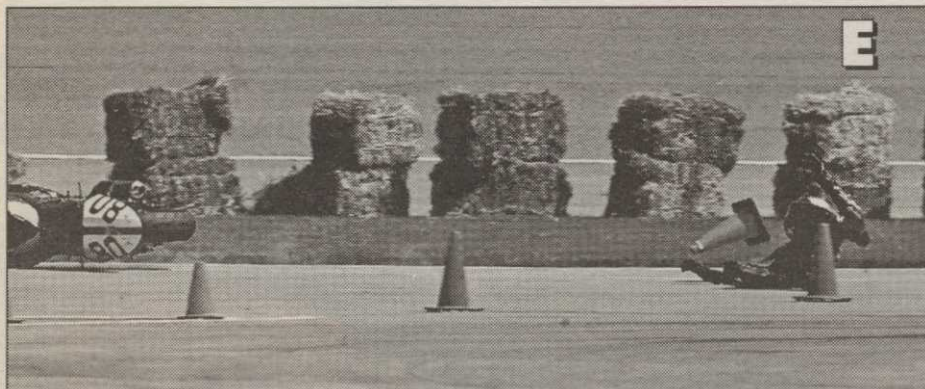
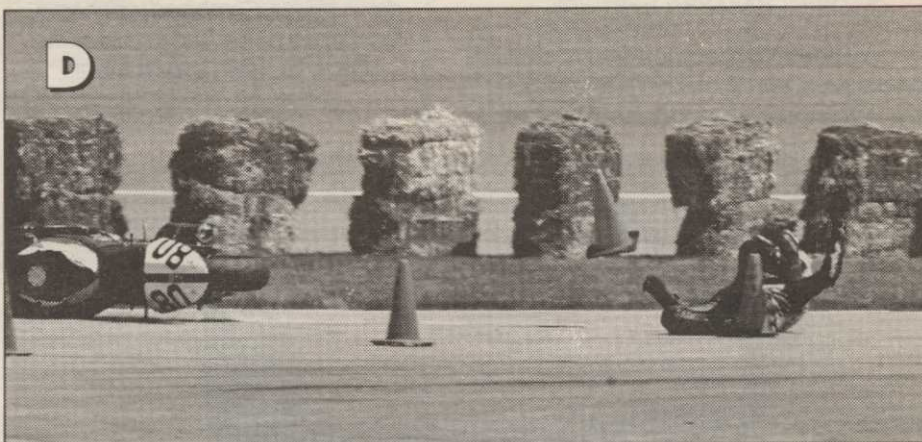
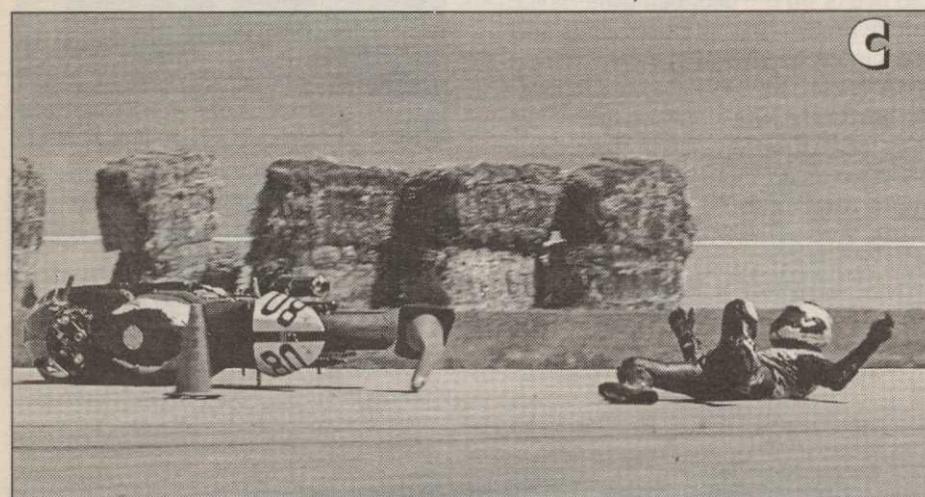
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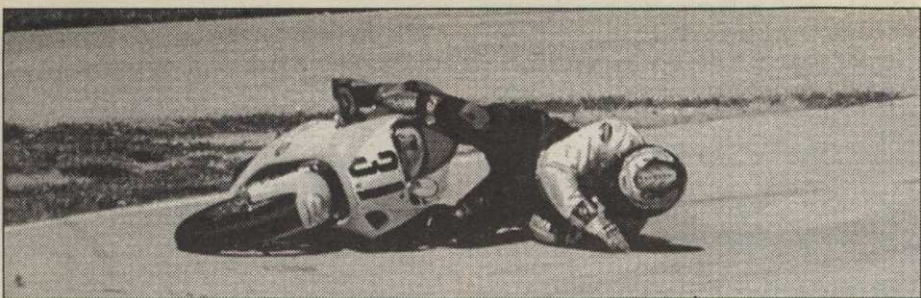
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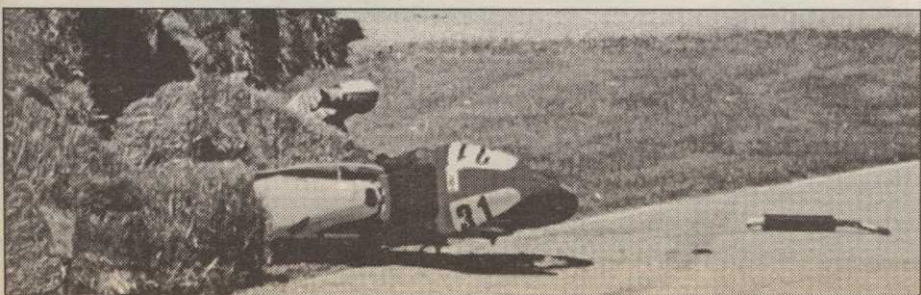
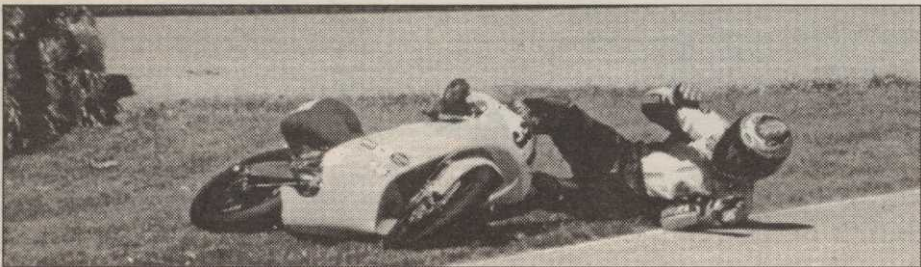


Kurtis Roberts (80) crashed at Pikes Peak, losing the 2000 AMA 600cc Supersport points lead and putting the Championship in jeopardy. But Roberts picked up his bike and carried on to finish seventh at Pikes. And despite being seven points behind after the incident at Pikes, Roberts went on to win the season finale and the title the next month, at Willow Springs. Photos by Brian J. Nelson.





John Bellinger (31) crashes while leading a WERA 125cc Grand Prix race at Indianapolis Raceway Park in June 2000, and hits the wall, demonstrating why run-off room is so important. Photos by Jamie Guffey/Artistic Intensity Photography.



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inch chocks sell for \$60. Quick-disconnect kits sell for \$24 per chock. I've used the 6-inch and 8-inch chocks, with quick-disconnect kits, all for tying in bikes front-wheel first, and they have worked and held up great. The quick-disconnect kits make it very convenient to remove the chocks when it's time to haul something other than motorcycles, or to work in the trailer or box van. From Black + Gray Design and Manufacturing, Inc., PO Box 349, Route 9, Garrison, New York, 10524, (914) 424-4111, FAX (914) 424-4199, e-mail indxblkgry@aol.com.

Plexus Plastic Cleaner, Protectant & Polish

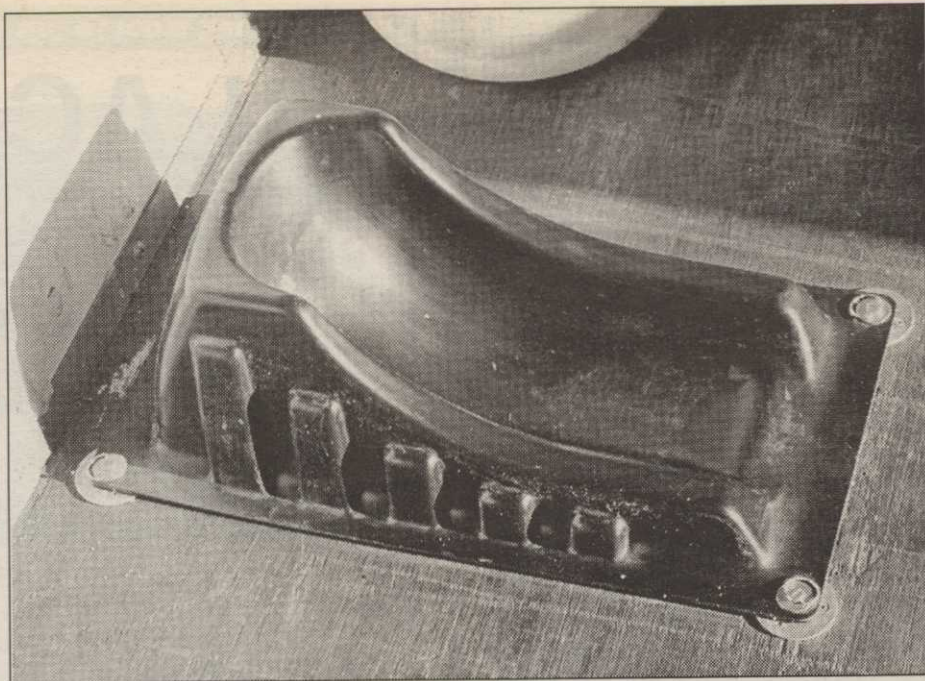


Plexus spray cleaner is good for face shields and windscreens as well as bodywork and other shiny surfaces.
Photo by Brian J. Nelson.

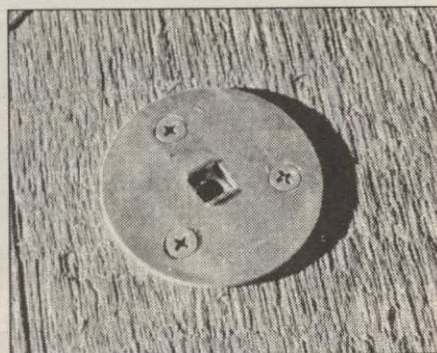
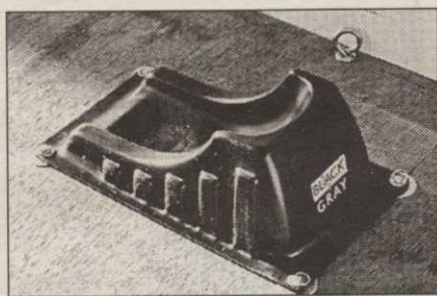
This aerosol spray was originally developed for use on aircraft canopies but is great for cleaning and polishing helmet shields and fairing windcreens. It's also recommended for motorcycle bodywork and things as diverse as CDs, computer screens, copiers, picture frames, mirrors, polished metals (I think that includes trophies), car dashboards and instrument panels, guitars, drums and pianos. You're supposed to wipe it off with a clean, dry, soft cloth (pieces of an old cotton T-shirt work well) and you're not supposed to use it with paper towels, but it actually works pretty well with the blue mechanic's paper towels. Plexus sells in 7-ounce and 13-ounce sizes for \$5.95 and \$7.95, respectively. Available from dealers, who can get more information from B.T.I. Chemical Co., 638 Lindero Canyon Rd., Agoura, CA 91301, (800) 405-6495, www.plexusplasticcleaner.com.

Magical Racing RS125 Ram-Airbox And Fairing

The Magical Racing ram-airbox and upper fairing for 1995-2001 RS125 Hondas features two ram-air intakes, one on each side of the fairing, where they collect clean (non-turbulent), cool air. I was attracted to the Magical Racing design because it can be installed without having to modify the



A Black + Gray plastic wheel chock in use, installed on the wooden floor of a box van using a Black + Gray quick-disconnect mounting kit. Photos by John Ulrich.

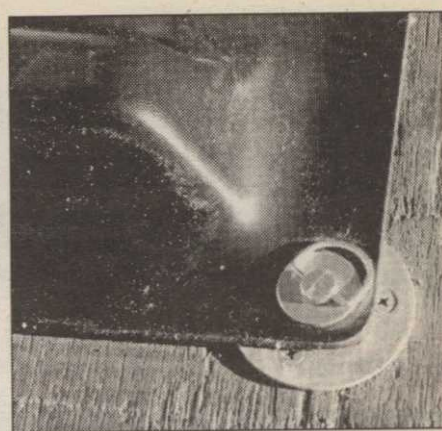


Black + Gray quick-disconnect mounting plate fits into a 3/4-inch hole drilled in the wooden floor of a box van or trailer, and accepts a Dzuz fastener attached to the Black + Gray plastic wheel chock.
Photo by John Ulrich.

radiator, which is required for installing some aftermarket ram-air systems and which decreases cooling efficiency. But the neatest thing about the Magical ram-airbox and fairing is that fact that the parts are so well-made and fit together so well. There's a convenient hatch in the bottom of the airbox to allow access to the spark plug, and control cables route around instead of through the box as on competing airboxes. Because of its design, the airbox is faster to remove and install for engine service.



The Magical Racing RS125 upper fairing includes two side-mounted ram-air intakes, positioned to scoop in non-turbulent, cool air. Photo by Brian J. Nelson.

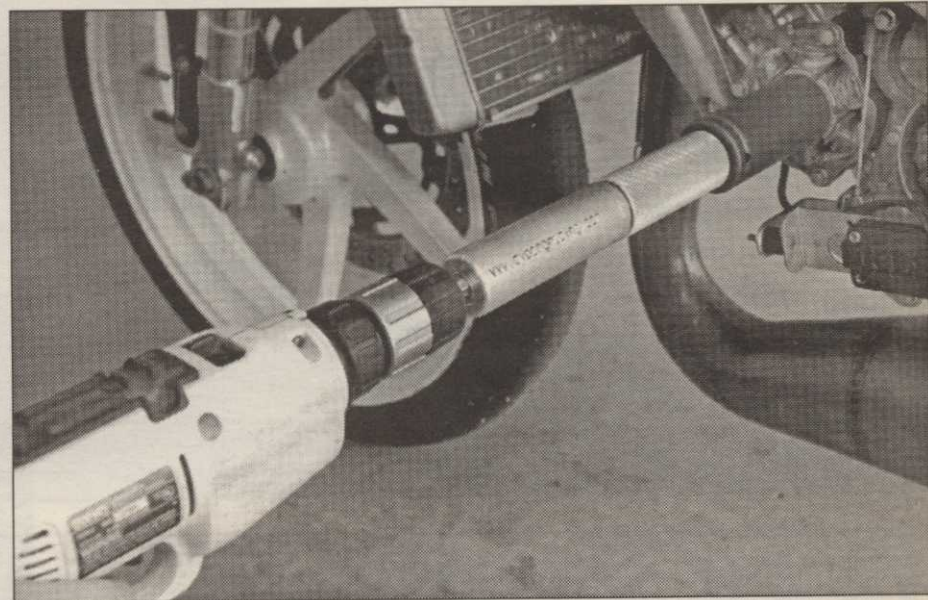


Close-up of one corner of Black + Gray plastic wheel chock, with dzuz fastener used in quick-disconnect mounting kit.
Photo by John Ulrich.

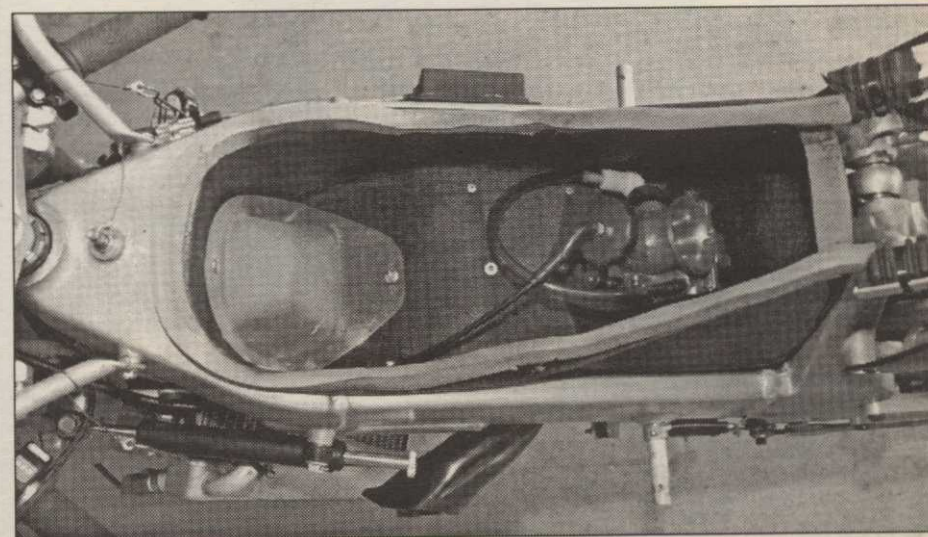
An airbox and upper fairing set is available for \$620 plus \$100 air freight from Magical Racing Co. Ltd., 3-4-25, Tamakushi-Cho Higashi, Higashi Osaka, 578-0932 Japan, phone 011-81-729-63-7036, FAX 011-81-729-65-6230, www.magicalracing.co.jp. When contacting the company, ask for Jun Ichi Yanagihara, who speaks English.

Better Built Folding Aluminum Loading Ramp

The Better Built folding aluminum loading ramp is about 11 inches wide and 7 feet long fully extended, but folds in half for easier transport and storage. It has plastic-coated tabs that fit over the end of a pickup truck tailgate or bed, and plastic feet at the end that contact the pavement. Maximum capacity is 1000 pounds and the ramp has been nice and solid while loading sportbikes and racebikes into a pickup. The ramp weighs 23.5 pounds and it sells for \$199.44 from J.C. Whitney, (800) 529-4486, www.jcwhitney.com and the part number is 01BS2777P.



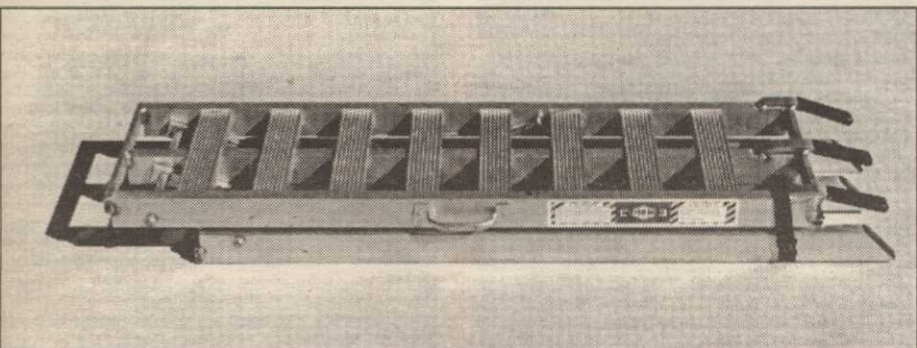
The Cyborg engine starter tool works with an electric drill to start the engine of a Honda RS125 while the bike is on the stand or stands. Photo by Brian J. Nelson.



Magical Racing airbox includes a convenient hatch (seen at left in this photo) for easy access to the spark plug. Weather-stripping tape is used to seal the box against the bottom of the fuel tank. Photo by Brian J. Nelson.



The Better Built folding ramp has a maximum capacity of 1000 pounds and has proven stable when used to load sportbikes and racebikes into pickup trucks. Photo by John Ulrich.



When not in use, the Better Built ramp folds in half and secures with a strap and snap, seen at right. The snap on our example stopped working almost immediately. Photo by John Ulrich.



Another view of the Cyborg engine starter tool, chucked into an electric drill. Photo by Brian J. Nelson.

Cyborg GP Engine Starter Tool

Racer Mark Sotiriou designed, manufactures and sells the Cyborg GP Engine Starter Tool. It's basically a one-way sprag clutch assembly that chucks into a 14-volt cordless drill, fits over the nut that holds the ignition rotor on the crankshaft and can be used to start a 1995-2000 Honda RS125 engine while the bike is still on the stands and on tire warmers. The tool gives the rider a few more minutes of tire-warmer time before the start of a race, eliminating the need to take the bike off the warmers and push start it soon enough for the engine temperature to come up before the 5-minute board is displayed. Of course, there is a more difficult way to do the same thing: Remove the rear warmer, have somebody hold the bike steady while another pulls on the rear wheel rapidly to start the engine, find neutral, reinstall warmer. But the Cyborg starter tool is easier and simpler to use, and

eliminates the desperation and panic often seen when the tug-on-the-rear-wheel trick doesn't work as planned. Available for \$216 from Cyborg Racing Group, PO Box 608, Cameron Park, CA 95682, phone (530) 676-8422, FAX (530) 672-0681, e-mail mark@cyborgracing.com. **RW**

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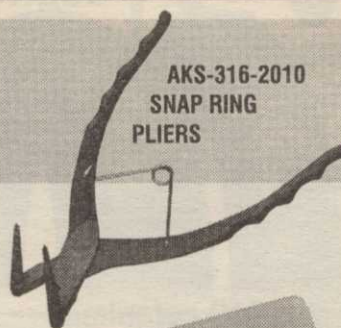
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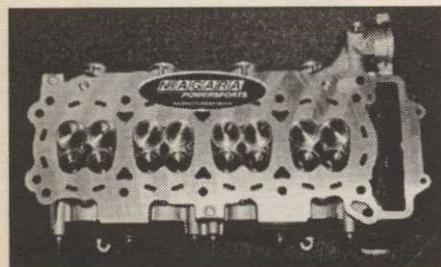
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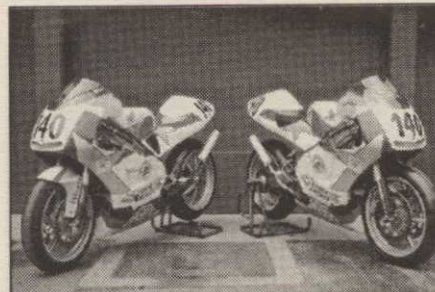
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Sport bike parts: All kinds available in stock, Yamaha, Suzuki, Kawasaki, Honda. Mastercard, VISA, American Express, Discover, and COD. Corey Cycles. New Orleans, Louisiana. (504) 915-4542, (504) 486-5078. (LA)

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Parting out 1992 Yamaha TZ250. 1993 engine updates, spare wheels with new rains, jetting, gearing, stands, manuals, spare cylinders, pistons, rings, clip-ons, pegs and brackets, great running bike, \$4300. SmokingTZ@aol.com. (203) 469-1336. (CT)

2000 ZX6R. Race Tech, Penske, Sharkskin, Vortex. Production legal, 400 miles on bike, consider trade for Aprilia 250 or buy for \$6500. Ask for Mat. Eves, (330) 239-0802. (OH)



Arrive and drive. Inaugural twelve-hour Endurance Kart Race (Under the Light). Jacksonville, Florida, April 7th. 14 turn road course. European racing chassis. Great seat time. No karting experience necessary. Complete racing instructions provided. Only \$287 per driver - everything included (kart, gas, driving gear, etc.). Have a blast as a team or individual! Johan. jschwartz@mullen.com. (978) 969-1911. (MA)

Sport bikes: GSXR, ZX9R, CBR. Rebuildable wrecks. Some bad, more good, big inventory. Salvage titles. No parts. (215) 672-3779. (PA)

For Sale: Arclight Racing 1999 Suzuki GSXR750. \$5500. This bike won the 1999 WERA National Challenge 750 Championship and finished third in the AMA 750 Supersport race at Daytona, March 2000. Very fast and clean. Full titanium Yosh exhaust. Completely sorted suspension. Completely race ready. (925) 284-1243. (CA)

For Sale: Arclight Racing 2000 Suzuki GSXR600. \$5500. This bike won the 2000 Suzuki Cup National Championship and the WERA National Challenge 600 Championship. Full titanium exhaust. Completely sorted suspension. Clean. Ready to race. Spare 600 motor. \$1000. (925) 284-1243. (CA)

2000 Ducati 996 SP5. Race ready. Purchased 3/24/00. FBF piston kit, 54mm exhaust, magnesium swingarm and wheels, special racing Ohlins shock and linkage, Ohlins forks with Brembo pump and PFM narrow band six piston brake kit, much more, never down. WSMC twins class champion. Street components included. \$30,000. Fred (505) 473-0282. (NM)

Ohlins parts for 2000 GSXR750. Ohlins Road and Track front forks, (bolt-on to stock), \$1750. Ohlins rear shock, \$785. Yoshimura T1 RS3 full exhaust system, \$1450. yzf1000r2@aol.com. (510) 888-9440. (CA)

1988 Hawk GT. MVR exhaust, HRC jet kit, SS brake lines, new Ohlins shock, Progressive springs, Graves clip-ons, 1mm over pistons, race upper and tail. \$3000 OBO. alanz@iwon.com. (810) 757-0339. (MI)

1997 Yamaha YZF-600 race bike. Dynojet kit, front/rear Kevlar lines, Yoshimura pipe, Ohlins shock, Race Tech springs, Daytona damper, race bodywork with new upper, race clutch and two spare kits. Spares. Race ready and is a great ride. \$4000. Flyboy_Dave@MSN.com. (651) 633-5695. (MN)

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1989 Honda Hawk, (titled and successful). 83hp, 330lb, 70cc, total loss, fresh motor, (Carillo, Falicon, JE, Megacycle), FCR's MVR exhaust, 1993 F2 front-end, Ohlins shock/damper, Marchesini, Brembo, RVF750 bodywork, OEM wheels rains, manual, notebook and spares. \$3750. Jim (303) 467-9930. (CO)

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1997 Ducati 916 Superbike. Ferracci built 984cc motor. Magnesium wheels, EBC rotors, termi, 50mm exhaust, quick change sprockets, Race Tech front/rear. Extremely fast! \$15,000 OBO. Contact Jason. (414) 328-0352. (WI)

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2001 GSXR600 street parts. Brand new: bodywork, clip-ons, chain, sprockets, footpegs, exhaust, shock. Two sets of everything. Email Sam@armyofdarkness.com or call (202) 872-1033. (DC)

1997-2000 GSXR600. New engine, carbs, black boxes, 2000 wiring harness (new), fuel pumps, gas tanks, kit air box with tubes. See list at www.armyofdarkness.com or email sam@armyofdarkness.com (202) 872-1033. (DC)

2000 GSXR600. Fresh engine, never down, Traxxon, Fox, Sharkskins, WER, M4, Graves, Tim Gooding motor (you won't find a faster one). Lots of spares available. \$5,800. Sam@armyofdarkness.com. (202) 872-1033. (DC)

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1996 Honda RS250R. Immaculate condition. 1997 Ram air system. Fast and reliable, minor modifications. Spares include: cylinders, heads, and many numerous other new spares. Set-up notes included. Only raced in 1999 AMA National Series, place 13th overall. Serious inquiries only. \$8,500 for all or trade for Honda RC51. rstaro@earthlink.net. (949) 650-4047. (CA)

1997 Suzuki GSXR750. Supersport prepped, Ohlins, LE, Yoshimura Duplex, Graves, spares, race only. \$4200 OBO. cjpeter@us.fortis.com. (816) 674-5991. (MO)

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2000 Kawasaki ZX6R racebike. Only 900 miles on bike, 600 of those were street. Engine stock, new Sharkskins, new Akrapovic, Circuit One suspension, many spares. \$6900. Near Portland, OR. Dale, njndale@aol.com. Eves (503) 666-1243. (OR)

Wanted: Marchesini wheels for TLR or 1997-1999 GSXR750. Robert Patch rpatch@kreative.net. (301) 674-0080. (MD)

Beautiful hinged clip-ons. CNC Machined with zinc hardware, 7/8 bars and press fit UHMW bar ends. Complete pair \$130. Most popular sizes. sales@blackandblueracing.com. ext. 124 (216) 251-5200. (OH)

1997 Suzuki TL1000S. Penske shock, Race Tech forks, M4 race system, Power Commander, Woodcraft, damper, Beasley, all new parts, built July 2000 and ridden one weekend. Very clean. \$5295. (419) 994-0031. (OH)

2001 GSXR1000. Black and gray. Available second week of February. Brand new. Serious inquiries only. Jmargiolas@excite.com. John (630) 279-2987. (IL)

TLR Parts: 1998 yellow tank, brand new. Sharkskins bodywork, complete set, drilled, but not raced in. Graves fairing bracket, also new. Ask for John. jmargiolas@collabria.com. (630) 279-2987. (IL)

1988 FZR400. Fresh motor, D&D, Ohlins, Race Tech emulators, R1 plastic, new tires, braided lines, GP Tech, stay, plus spares. \$3000 OBO. (815) 327-5156. (IL)

1995-1997 ZX6R parts. Frame with title (1995). Two Fox shocks, swingarm and motor. Yoshimura rearsets. Also have Hindle exhaust and Sharkskins upper and lower fairing (three piece). (319) 683-2752. (IA)

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1998 Muzzy Raptor 58750. Fresh motor. Zero miles, 145hp. Lots of spares. Including wheels with AP rotors, \$10,000. Call Rick after 6:00p.m. EST. (954) 680-8362. (FL)

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2000 Suzuki TLR. Parting out. Have everything. Also have 1999 Suzuki GSXR600 motor and extras. Some plastics. 1997 CBR600 front end, complete with wheel, \$3500. Call with needs. (718) 884-1737. (NY)

1993 CBR600F2. Sharkskins, Two Brothers pipe, Ohlins shock, rearsets. Good beginner bike, \$2400. E-mail siobhan06@aol.com. (304) 728-7874. (WV)

1996 Yamaha TZ250. Last year they were designed for leaded gas. Kit airbox and fuel pump system. Battle shifter. Gearing, jetting. Spare cylinders, heads, pistons, rings. Must sell. \$6800. (208) 529-8319. (ID)

Ducati 748, 916, 996 Termignoni aluminum slip-ons. Used one month. Ducati Performance Chip, (new), paid \$800, sell for \$450 for both. (815) 578-1910. (IL)

2001 Suzuki GSXR600/750 available now. GSXR1000 available February. SV650SKI Hayabusa available now from Action Motorsports. Shipping available. Ask about parts access. Racer discount. 1999 R6, 315 miles, street bike, \$6000. E-mail actionm@kih.net. (888) 267-4259. (KY)

R1 parts. Pipe, \$75; tail section, \$75; left middle, \$45; F2 roadrace plastic, \$150. F2/F3 street plastic, Ninja 250 parts, everything. V&H pipe for oil cooled GSXR1100, \$125. (615) 643-7285. (TN)



2000 TZ250. Professionally prepped and maintained. AMA top ten finishing bike. Only raced four times, never down. Better than new, many spares, \$14,500. Ed, egmarchi@innecite.com. (530) 626-9382. (CA)



1994 Yamaha TZ125. Fast, reliable bike in great shape. Spare wheels, clutch, new rains, dry clutch, inverted forks, ride-height adjustable, rear stand, Yamaha Service Manual. Will deliver in Florida, \$2500. (305) 753-5982. (FL)

1995 900RR Superbike 945. RES, 145hp motor, Carillo flatslides, Erion head and cams, etc., Race Tech, Ohlins, PM wheels, D&D, seven gallon double dry break. Many race spares, \$7000. E-mail: teambearsouth@yahoo.com. (817) 337-0421. (TX)

For Sale: R6 parts. Two sets Airtech bodywork, painted, red or blue. Radiator, Penske shock, M4 exhaust system, GP Tech fairings stay, front forks, clip-ons, and many more spares. (703) 509-8238. (VA)



1996 Kawasaki ZX6R. 20 over degreed cams, Muzzy titanium exhaust, Penske rear shock, Race Tech forks, ported, polished, fresh engine, two races since rebuild. Fast. \$4200. Joe (813) 672-0219. (FL)

1999 Team Green ZX6R. Built and raced by Eric Wood. Penske shock, Airtech, Woodcraft clip-ons and rearsets, Computrack chassis, Kit blackbox, MJN carbs, and more. Comes with spare wheels with rains, and two motors. \$7900. Call Joe at (781) 405-3342. (MA)

1996 Race Ready R6. Full M4 exhaust, Scott's rotary damper, Attack rearsets, Factory engine cases, Kevlar lines, Sharkskins with spares, frame sliders. Raced twice, never been down, 2700 miles. Can deliver on East Coast, \$7000. Tim (919) 967-2159. (NC)

1996 Honda F3s. Bike one: GMD Computrack, Ohlins, 520, braided lines, rearsets, Vortex, D&D. Needs bodywork and gas tank, \$1850. Bike two: Almost complete motorcycle, missing a few parts. Parts bike, only \$850. (815) 288-7643. (IL)

1998 Suzuki TLR. M4 exhaust, Power Commander II, Sharkskins bodywork, (with air ducts), Penske rear shock conversion, Race Tech front end, GMD Computrack optimized. \$7500. Fourth at Suzuki Cup. (602) 757-1536. (AZ)

2000 Ducati SP5. Prepared by Gotham Racing. Pace ready. This bike has everything. New, beautiful and immaculate. Approximately \$50,000 invested. Offers over \$35,000 only. Fax (301) 879-8527, (301) 879-8699. (MD)

1989 FZR400 Superbike. FZR600 carbs, 1mm over, GSXR750 forks, Ohlins shock, PM wheel, total loss, new clutch, small spares, manual, 63hp. Getting out of racing, \$2300 OBO. Evenings (419) 732-3407. (OH)

1996 GSXR750. Race ready. Supersport motor, Ohlins, Fox, Race Tech, Factory, Yosh, SS Hindle with carbon can, SS lines, EBC HH, Sharkskins, CF front fender, 520, 207's, full spares kit, extra tank, wheels, bodywork. \$4500. Chris (760) 944-0902. (CA)

2000 Kawasaki ZX9R. Full PACE setup. GMD chassis setup with adjustable triple clamps, Penske triple adjustable shock, kit suspension linkage, titanium connecting rods, Dyna ignition, Kawasaki kit parts all over. Over \$2000 in front fork work. Thousands of dollars in spares available. Asking \$12,000 OBO. Call Eric Wood at (508) 339-5772. (MA)

Wood Rotax SJ600. New 604, five speed engine, built six DRS racing, two sets bodywork. Holds singles lap record at CMRA tracks. 1996 Suzuki superbike. All Yoshimura parts except dry clutch, new frame with Computrack clamps, many spare parts. Call Bob Stevenson at (817) 994-9591. (TX)

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For Sale: Late model Kawasaki ZX7 and ZX9 motors, VGC \$800 US each. SRAD750 motor VGC, \$650 US. Shipping extra. phdoyon@hotmail.com. (514) 387-4479. (Quebec, Canada)



1999 Suzuki SV-650. SS lines, Two Brothers exhaust, Sharkskins with new paint, rearsets. Plenty of spare parts, includes all street and stock parts. Will trade for 2up Ducati. \$5000. (631) 376-0530. (NY)

Hyperpro steering damper. Fits Yamaha R1, top mount. (262) 763-1662. (WI)



1999 Suzuki SV650. New M4 and Michelin pilots, brake lines, steering damper, frame sliders, CFM rearsets, jet kit, TLR fairing. Proven winner. Extra clean. Low miles. \$5200. (954) 926-2380. (FL)

1995 Honda CBR600 F3. Multitech bodywork, braided lines, rearsets, case covers. Good shape. Tons of spares: slip-ons, rearsets, rear rim, tires, oil, everything ready to go. Amateur top five finisher all year. \$2400. (614) 901-0175. (OH)

1998 R1. Set up but never raced. Fox, Ohlins, 520, Graves, Multitech, M4, Michelin, Pitbull. Tons of spares, I have everything to go racing. \$8500. Possible delivery. E-mail ambfx67@aol.com or call (303) 355-3496. (CO)

Z Leathers: Size 42, matching boots size 10½, red, white and blue. Paid \$1600, asking \$900. (408) 315-9399. (CA)

2000 GSXR750. Salvage title. Cosmetic damage only. Perfect race bike. \$5800 OBO. (262) 367-6195. (WI)

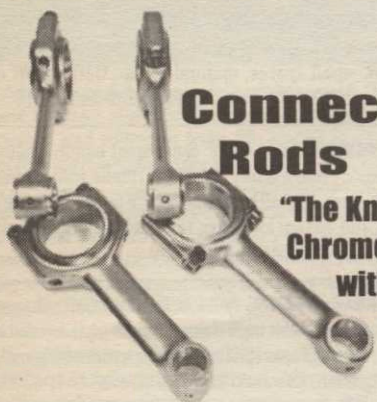
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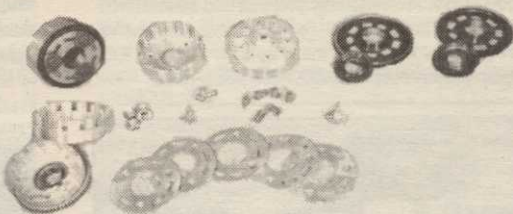
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Want Ads

continued from page 85

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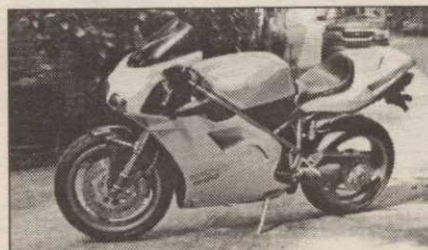


1993 Yamaha TZ250. Original owner, purchased from Yamaha U.S. in 1995. Tuned and maintained by Steve Biganski, (Extreme Lean Motorsports). 1995 updates, spares. Chassis aligned by Computrack. \$6000. Larry-roberts99@aol.com. (760) 822-6457. (CA)

1989 Honda Hawk race bike. 1996 F3 front end, Fox shock with Penske re-work, RC30 body, 700cc Dyno'd 65hp and spares galore: tires, levers, pegs, clutch, dampers, \$2500. Also have twice used portable 1800 watt generator, \$250, and once used TyrSox tire warmers, \$200. Used Dainese Fogarty leathers (58), boots (11) and gloves, \$500. mslater@spp.org (501) 664-9348. (AR)

RC51 Race Plastic Sale. Airtech SBK tail, brand new in box with foam pads, \$169. Sharkskinz lower fairing, painted red, perfect shape, \$149; both for \$299. Pro-Tek rearsets, new, \$249. (201) 451-9890. (NJ)

1997 GSXR600. Race ready. Yoshimura titanium exhaust, Sharkskinz, Race Tech, Ohlins shock and damper, Goodridge, Graves, EBC, EK, K&N, Daytona. Auto meter, AFM, 207 stars. Meticulously maintained. \$6200 OBO. (847) 797-8369. (IL)



1995 Ducati 916/955 Superbike. 1400 miles on professionally built 955 motor by BCM Motorsports. Balanced/blueprinted lower end with lightened flywheel, new bearings, seals, and re-cut transmission, never raced or on the track. Gio.Ca.Moto carbon exhaust and clutch cover, Casoli carbon air box, intake, front and rear fenders, Corbin solo seat, steel lines, AFAM sprocket carrier, re-valved Ohlins rear shock and Hyperpro front damper, updated regulator and Yoyodyne clutch slave, custom painted wheels and bodywork, painted wheels and bodywork, polished rearsets. Faster than 996 with all the goodies! \$13,000. Andrew, (404) 364-4025. (GA)

Penske Racing Shock 8760 Series for R1. Triple adjustable damper with piggyback reservoir, \$850. Michelin Pilot slicks, new. Front 12/60-17, rear 18/67-17, \$250. Complete stock exhaust system for 1999 R1, \$175. (770) 533-4511. (GA)

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THE ADVENTURES OF A RACER

First Person/Opinion
By Chris Ulrich



When my new bike was ready I flew to Alabama to go testing with Mark Junge and the Valvoline team at little Talladega, on January 13. The day was basically f--ked; my tires didn't show up so I had to run two brands of used tires and it went downhill from there. I did figure out that I was going to have to do a lot of work at Willow the next weekend to get going.

We had planned to test for two days, but it was supposed to storm Sunday so we packed up and went back to Team Hammer headquarters in Athens. I helped Tommy Cooley load my bike into the Dodge so he could take it to California. Then I went with Kelly Collopy, Todd Fenton and Shane Clarke to Wal-Mart to do some grocery shopping. From there it was back to Shane's place to watch football and play video games. My flight left the next morning at 6:30 a.m. so I went to Huntsville and got a room at a hotel close to the airport, one that had a shuttle service. On Sunday I left Alabama for a more tropical climate. Miami!

This is one of the perks of being a motojournalist. I was assigned to do the RSV Mille press intro at Homestead. I had never been to Miami or Homestead and had never rented a car. I had to rent a car, but you have to be 25 years old to rent a car without paying a horrendous surcharge. Our travel agent, Patty Roberts, hooked up some special deal so I could rent a car without a surcharge, but it wasn't a sure thing. After getting my bags, I had to figure out where to go to get the rental car. So I walked around to see if there was a rental car desk in the airport. I had no luck there. Then I walked outside and saw the busses. I cruised across the street and hopped on the Avis bus. I figured that I would try my luck at Avis first. If that didn't work like Patty hoped, I would go over



Homestead, RSV Mille R: "That turn had a lot of sealer at the apex....It was fun because the front would push and then when you accelerated the rear would spin....Basically there was no traction, combined with a good opportunity to push the front and a really good opportunity to highside!" Photo by Tom Riles.

to Alamo for another try. Avis gave me a car at a pretty good rate, so I took it and bailed out. I got directions to Homestead from the lady at the desk and I was on my way. I kept thinking of that Will Smith song about Miami. I was doing all that I could to get the song out of my head, but it wouldn't go away. The annoying jingle eventually phased out of my thoughts.

After taking the wrong exit and driving around Homestead for a few min-

utes, I found the hotel. It was two in the afternoon. I checked into the hotel and then went and got something to eat. While I was out I planned my route for a run. I found a pretty safe looking route and did the mileage, went back to the hotel, got my running gear on and hit the road. I completed my run and then got ready for dinner.

I went to dinner with Aprilia USA's Robert Pandya and Bill Stone, along with Giorgio Del Ton who is Director of Engine Development and Testing at Aprilia, and RSV Mille R Chief Engineer Mariano Fioravanzo. The engineers knew my father from some other Aprilia intros and respected his grasp of the technical stuff. Fioravanzo was pointing at me when we were introduced, trying to find the right English word and saying "He's the, he's the..." Yes, the son of John Ulrich. It is a tough act to follow. I can outdo him on the racetrack, but when it comes to the tech stuff, I'm screwed!

It was the welcome dinner, so of course the usual journalistic suspects were there. Except Don Canet, I guess he had to take a red-eye flight. He joined us in the morning. The bad influence from MC Online wasn't there to try and get me to drink so I had no problem avoiding alcohol.

We were all talking about the tech stuff and the subject of four-stroke GP bikes came up. Del Ton said the cost to develop a four-stroke GP bike would be astronomical.

I think during the dinner I made

but you never know what it is cooked with.

It was time to get down to business the next morning. We left the hotel at 8:00 a.m. and headed to the track. This was my first time at the track, so I didn't know what to expect. They were having a fire safety seminar at the track for representatives from all sorts of tracks and organizations across the country. I saw Merrill Vanderslice of the AMA and some other guy who works for Road America and yelled at me during the 1999 AMA National there. I didn't talk to Merrill, but I did say hello to the guy from Road America.

Aprilia had an introduction of all the staff members on hand and gave us a flag briefing, then took us for a two-lap track tour in a van. When all that stuff was done, it was time to ride. Bill Himmelsbach from Blackmans Cycle switched my bike to race shift pattern and had me check out the lever position. I was going to ride the RSV Mille in the morning and the Mille R in the afternoon. I was assigned Mille number seven. I noticed that my bike only had 13.5 miles on it before I went out. The bike had barely been run.

The Aprilia technicians had put the competition settings on the bike, which was +1.5 turns on the rear preload.

My first few laps were spent feeling out the machine and learning the track. The bike had a really smooth power delivery and was really easy to

Del Ton nervous when I told him that I was going to learn the track in the morning and then push hard in the afternoon. He got a worried look on his face and asked me not to crash.

After dinner I cruised across the street to the Shell station to pick up some supplies for the next day. I walked around a bit to work off a little bit of the dinner that I ate. I tried to pick the most rider-friendly thing on the menu,

ride. The track had some sealer patches that were really slick. In the corners where there was sealer over concrete the track was extremely slippery. Once I got comfortable, I started to push.

Kent Kunitsugu was behind me for some of the session, but I didn't know it until I had a little moment. I was leading into turn six about halfway through

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Adventures Of A Racer

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the session, and the brakes started to fade. I found this out because when I ran it into turn six at the three marker just like normal, the bike didn't slow down enough and I was in too hot. I turned it in anyway and ran wide, across the sealer and the concrete. First I lost the front and had it on my knee, then I got on the gas and the rear went. I felt like I was at Ken Maely's dirt track except I was on a high-dollar Aprilia instead of my XR100. After that I decided that I better calm down for a minute. I didn't want to ruin a bike in the first session and I figured that I should wait until the end of the day to ball bikes up. I stood the bike up and looked back to see Kent right behind me. I cruised for about half-a-lap and then tried to catch Kent. My efforts failed. I was still testing the limit of the bike and didn't want to get into too much more trouble. I also kept hitting false neutrals into turn eight, and almost threw the thing on the ground five or six times there after missing shifts.

That turn had a lot of sealer at the apex. Most of the other journalists I saw there were going around the sealer. Kent wasn't, and neither was Canet. It was fun because the front would push and then when you accelerated the rear would spin. The turn was the slowest on the track and it led onto the back straight so it was really important to get a good drive. Basically there was no traction, combined with a good opportunity to push the front and a really good opportunity to highside!

The bike felt like it didn't want to finish the turns when I was accelerating. So I had Bill Himmelsbach add another round of preload to the rear. Now the preload was at +2.5 from standard. I also had him adjust the shift lever to help with the false neutral problem.

After that, the steering was improved. By now I was starting to have fun, the patches were getting better and I was getting a better grasp what I had to do to put together fast laps on the Mille. Turns one and 10 are the fastest turns on the track; therefore they are the most important. The turn off the back straight was a little weird, and I wasn't doing turn one that well, yet. I was experimenting with lines into one and working up confidence in the bike. By the end of the session I was almost going into the turn tapped in fifth gear. I thought all the slower turns were coming along also, and all I needed was a little bit more track time.

But I was still hitting false neutrals into turn eight and the brake lever started to come into the bar at the halfway point. I remember telling them that the bike had a brake problem, but they never fixed it. The front felt like it was bottoming when I was on the brakes so I talked to Bill and he added some more preload to the front end.

The changes we made helped the handling and I pushed harder. Now I was going into turn one barely backing off in fifth and then getting right back on the gas and driving toward turn two. By the end of the session I could get it into the turn WFO and

bounce it off the rev limiter all the way until I had to straighten it up to put the brakes on for turn two. A couple of the Aprilia guys thought that my bike was popping when it was leaned over. I explained to them later that I was just using the rev limiter.

I was pushing really hard this session and the brakes started fading within four laps. Then near the end of the session I ran out of gas, which sucked because I had just gotten hooked up with Canet. For some reason I was using more gas than any of the other journalists; I was just having fun. I sat out there for a minute and then started to push the bike in. The fuel light had come on in the last session, but it was okay, so this session I ignored it and paid the price. I discovered that when the light comes on and stays on, no flashing or anything, that means you better be ready to coast to a stop and start pushing. They sent a truck out for me at the end of the session.

Lunch break and the technical briefing were next. We were supposed to get four sessions in the morning, but they cut one. I think they wanted to let the track warm up. All the other guys were kind of sketched out by the sealer, too. I couldn't remember if we had three or four sessions, I was too busy pushing my bike and thinking about going faster to remember.

I ate lunch and listened to the tech briefing. I had started to get a little headache before lunch because I hadn't had anything to eat since breakfast. So I made sure that I ate enough and downed a bunch of water and Gatorade, too. I also had half-a-cup of coffee to make sure I got my caffeine fix. Usually I don't get to that headache point, but I had been busy with making notes and other stuff so I got behind on my eating. I was well hydrated, but needed food.

Del Ton and Fioravanzo gave the rundown on the bike. I paid good attention, took notes and wrote as fast as I could but still missed some stuff so I scheduled a personal question-and-answer session with them for later.

Then it was my turn to ride the Mille R. At first the bike felt weird. The Mille R has Ohlins and Pirelli tires instead of Showas and Dunlops. The bike felt more rigid. The competition setting had also been installed on this bike so the rear preload was +1.5 turns from standard.

The awkward feeling of the bike went away after the first couple of laps and I started to ride the bike harder. Although the bikes had the same engine, the Mille R felt like it accelerated harder than the standard bike. I think that may be because the difference in weight and the racing exhaust system installed on the R. The Mille R also stopped better than the Mille. But the tires on bike number 22, which I rode, were totally shagged. The rear was coming around on me all over the place. The fuel light came on during the session so I came into to get some gas, and asked for new tires for the second session.

They took my bike off to a different garage to do the tire swap. I think

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they didn't want the rest of the guys there to find out that I was having new tires put on. I had my question-and-answer tech meeting with Del Ton and Fioravanza so I missed most of the next session anyway. But when it was finally time to go again, this time Bill filled my gas tank to full capacity, then warned me that I had a full tank before I went out again. I used that session to scrub the tires in.

The next session was fun; I pushed really hard and did a 1:34 lap time. The Mille R was better once I got used to it, turned-in well, felt rigid and stable and like it would be good to race. The brakes did not fade on the Mille R at all.

By the ended of the session I was alternating my approach to turn one to see if one way was better than the other. I had been using fifth gear and bouncing it off the rev limiter down into the corner. Then I started using sixth gear into turn one. I would hold it pinned

and downshifted two into third gear for turn six, which is a flat right turn with a sealer-covered concrete patch at the apex. I went inside the patch, because the concrete had no grip. If I was careful I could trail the brakes into the turn; sometimes I would trail the brakes alot, sometimes a little. Then I would get on the gas early out of turn six, because turn seven opened up onto the second middle straight. I would short-shift the bike and just pin it for seven. It was kind of dangerous, but by time I was in the higher rpm I would be on the fat part of the tire. If I didn't short-shift the bike I would have had to shift at the apex so I thought shifting early was the fastest and smoothest way through the corner.

Turn eight is a left-hand turn that leads onto the back straight. Here I hit the brakes before the three marker and banged three downshifts. The turn was tricky; it was go hard and blow the drive onto the back straight or brake a little early and be slower at the apex, but get a better drive onto the back straight. I chose to slow the bike down at the

onto the front straight, and then started at turn one again.

I looked over at the pits and was surprised to see that I had an audience. Every time I would go by the front straight the Aprilia guys would be on the wall watching me go into turn one. I think I made them nervous. I was just having fun.

I was on it good for the last session. I got hooked up with Canet for the session, got a good rhythm going and set some good times. I was on him hard, looking for a place to pass, and then he just let me by. Then I put in some good laps with Canet on my tail. I won the journalist grand prix for the day, set the fastest lap at 1:32.00 and had the highest top speed at 141 mph, just 1.0 mph faster than Canet. I was just having fun. Canet was right there with me, so it was close. I didn't ball the bike up, had fun, and upheld the honor of *Roadracing World* over all the other magazines.

I think the Mille R is one of the coolest bikes I have ever ridden. The coolest thing about both the Mille mod-

would just let off and bang a downshift into turn 10. I would go from pinned in fifth to bouncing the bike off the rev limiter in fourth and the back wheel never chattered.

Later I was informed that doing that was really bad for the engine. Maybe that's why my bike started to vibrate near the end of the day.

I went to dinner with the crew that night. They had all sorts of weird shit at the restaurant we ate at, including alligator as an appetizer. Tastes like chicken.

I woke up the next morning and drove to the airport. My Northwest flight to Memphis was going to be late and I was going to miss my connection so they put me on a non-stop flight to LAX with American Airlines. It was a good thing that I was there early so I didn't have to rush around the airport. After the five-hour flight I arrived at LAX, picked up my bags, found my sister (who had been sent to pick me up) and went to the house to load up the box van to go out to Willow.

On Thursday we were doing our bike shootout. I set fast time for the day on the standard GSX-R1000 with a 1:26.6. The GSX-R1000 won the shootout because it was easy to do the times on it, and it was a struggle to do the times on the YZF-R1.

On Friday and Saturday I struggled with set-up on my new GSX-R750. It just didn't work like the bike I rode at Willow in December no matter how hard my mechanic Jeremy Daniel and I tried to sort out the bike. I never got it right. I still managed to do a 1:24.8, but I was disappointed that I couldn't reach my goal of turning a 1:23.

My race Sunday was frustrating. I made a move into third on the last lap of the six-lap 750cc Modified Production race and then got balked by a lapper who was in the middle of the track in the last turn. Not on the inside or the outside, but in the middle. I got edged at the line.

In the Formula One race I had some problems with the rear end stepping out and pulled in to see if I had a flat tire. It wasn't flat so I went out and made do. I turned some more 1:24s but it wasn't what I wanted.

I have a lot of work to do before Daytona to get my bike right. I guess that it is better to have problems now than when the Pro season starts. I have a few more tests before the season starts and I'm taking it to Computrack before I ride it again, so I'm pretty sure I can get the bike sorted out.

RW



Willow Springs, GSX-R750: "It just didn't work like the bike I rode at Willow in December no matter how hard my mechanic and I tried to sort out the bike." Photo by Devin Capps/Public Imaging.

until the bumps after the apex and then let off, stand the bike up and brake, bang three downshifts; sometimes I would hit two downshifts. I was undecided there but leaning toward two downshifts; if I downshifted twice I could carry a lot of roll speed through turn two and be on the gas hard to turn three. If I went down three I would hit the rev limiter pretty hard. And if I went down two the bike was not sideways into turn two and I could still get a good drive out because the bike had good torque.

Turn three was neat, even though it had a big sealer patch and was a bit slick. The track has a chute to turn four, which is a really banked turn with a concrete patch covered with sealer in the middle of the corner. I could go in wide or shallow, I just made sure I was on the gas early because the track turns back to the left and opens up to the first middle straight.

I braked before the three marker

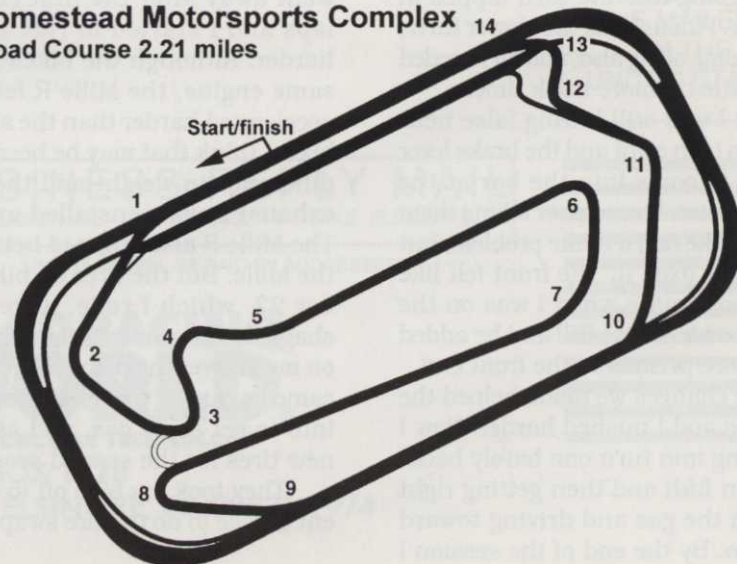
apex and get a good drive. Turn nine is the transition onto the back straight. I would use the curb out of eight and stay wide, aiming the bike toward the wall to keep it leaned over a little bit so the bike would accelerated hard down the back straight.

Turn 10 was really important to getting a good lap time. I would run along the wall and hit the brakes to get the bike turned, then get back on the gas hard down into the turn until I was at the end of the curb on the outside. I hit the brakes and downshifted two times into the third gear. This turn was really fun. If I hit it right I could get the rear tire lit up on the sealer and then keep it hung out until I had to turn to the left to set up for the chicane.

The chicane is a right-left flick. I could go into it really wide and be on the gas all the way until I had my knee on the ground. That wouldn't work in a race; I would probably get stuffed hard. I would flick the bike back to the left and open the gas to get a good drive

els is the slipper clutch. I could bang downshifts and dump the clutch without the back wheel chattering. Some times coming off the back straight I

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